SCAIFE COMPANY

AND

THE SCAIFE FAMILY

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SCAIFE COMPANY AND THE SCAIFE FAMILY

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AND

THE SCAIFE FAMILY

1802 - 1952

A History of the Oldest Manufacturing Company west of the Alleghenies under Five Generations.
By WILL & MAXINE SCHOYER, *in collaboration with several employees of Scaife Company.*

PITTSBURGH, 1952

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PRINTED IN THE UNITED STATES OF AMERICA
BY DAVIS & WARDE, INC., PITTSBURGH, PENNSYLVANIA

Contents

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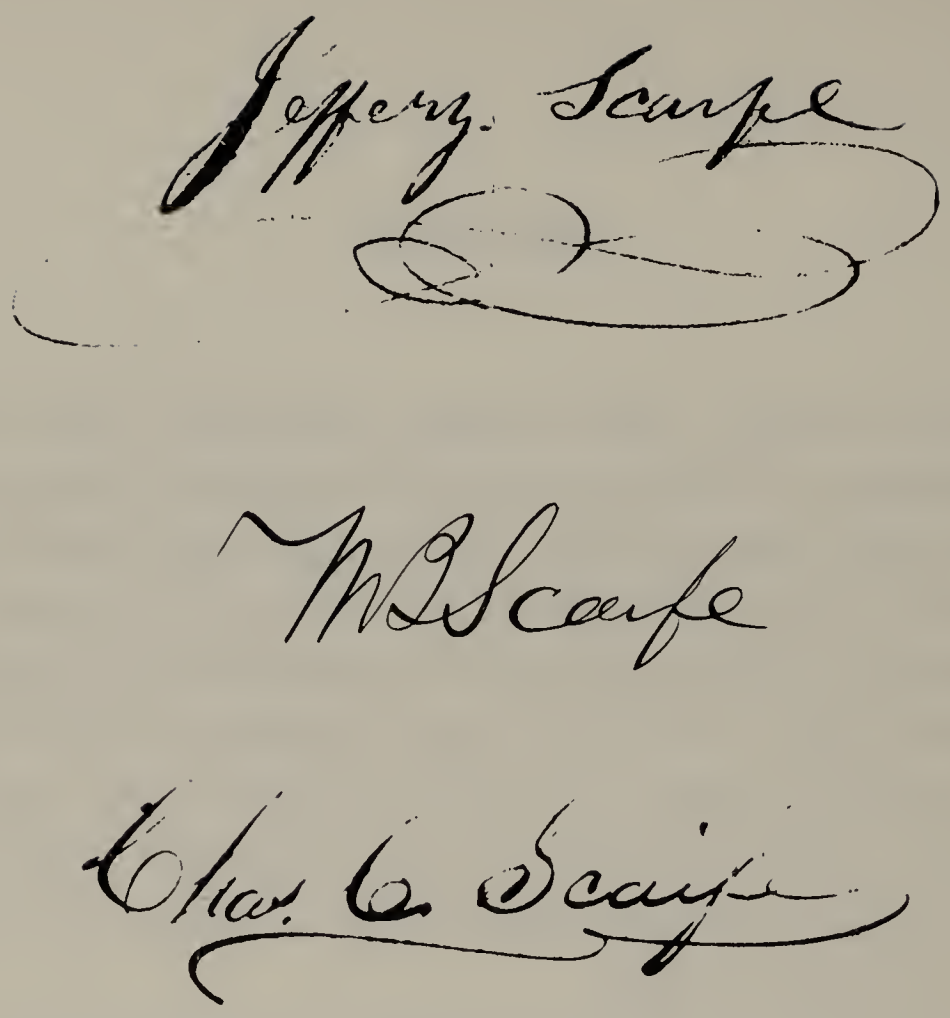
	Preface	*vii*
I.	A Business is Founded—1801-1832	1
II.	The Second Generation Takes Charge—1833-1848	13
III.	The Steamboat Boom and Bust—1839-1853	29
IV.	The Lifeboat Business—1854-1858	50
V.	Oil Boom and Civil War Period—1857-1867	67
VI.	William's Final Years—1868-1876	86
VII.	The Third Generation—1876-1890	101
VIII.	Further Growth of the Business—1891-1901	120
IX.	Beginning A Second Century—1902-1915	138
X.	The Fourth and Fifth Generations—1916-1952	152
	Epilogue	181

Preface

A COMPANY history which begins twenty-six years after the Declaration of Independence and continues to the present is, to say the least, almost unique. A business which has accommodated itself to changing times over a period of a century and a half, which has varied its products of manufacture as demand or other factors made a new line more desirable, which has been handed down from father to sons for five generations, and which is at present a larger and more vigorous industrial operation than at any previous time in its history, has established a record of which it can well be proud.

Scaife Company is no industrial giant. Its fortunes have fluctuated widely throughout the years. It has survived fires, floods and business panics, the New Deal and, thus far, the Fair Deal. It is a prosaic, unexciting business, but it still can lay claim to being the oldest manufacturing firm in the entire United States west of the Allegheny Mountains. It has always been engaged in metal fabrication. It has always been located in the Pittsburgh district. It has always been owned by members of the Scaife family.

As of this writing it is engaged again in the manufacture of defense material for the armed forces of the United States in addition to manufacturing its regular line of products. Beginning with the War of 1812, and continuing through each successive war in which this country has been engaged, Scaife Company has placed its resources at the service of the government.



Signatures of Five Generations of Scaife Company Heads

I

A Business Is Founded

1801-1832

THE man was young and the town was young when Jeffery Scaife rode a jolting pioneer wagon, in which he had left Philadelphia five weeks before, down from the Allegheny Mountains into Pittsburgh.

In this year of 1801, Jeffery, who had been born in Cambridge, England, on October 22, 1781, the month before Lord Cornwallis surrendered to George Washington, was a mere lad of twenty. His destination at the forks of the Ohio, a trading post with a handful of 1,565 unruly inhabitants, was still accounted—at least in the staid, established East—the jumping-off-place to the howling wilderness.

Less than a decade had passed since the last Indian-fighting expedition had marched from this settlement, and it was only seven years before that its citizens had staged their riotous Whiskey Rebellion, defying the Federal government. The western boundary of the sixteen United States, created a quarter century before by the Declaration of Independence, still lay no farther west than the Mississippi River, for the Louisiana Purchase, which would double the national territory, was not to be consummated until 1803.

As the nineteenth century dawned, the raw metropolis on the site of old Fort Pitt promised its fledgling citizen little but a struggle to start anew amid formidable uncertainties.

Yet as Jeffery rumbled into town, mud-spattered from fording the bridgeless streams, bones aching from the pounding of the rutted road, it would have taken more than a few prospective hardships to cast down his youthful high spirits. He had recently

made the decision to strike out as his own master in this infant commercial center. In entering Pittsburgh he was entering on his life's career. A glance at his family background will trace how this came about.

The original Scaifes were of Danish origin, having migrated to England in the fourteenth century or earlier, since records survive of two different Scayfes who served in the British Parliament under King Edward II, who reigned 1307-27. They both lived in the Parish of Kirkby Stephen in Westmoreland County, close to Raisgill Hall and Orton, presumed to be the original seats of Jeffery's forebears.

Years after Jeffery's arrival in Pittsburgh, in 1876 to be exact, his son, William Borrett Scaife, with whom this history deals at length, wrote, "I, William Borrett Scaife, having been requested by the members of my family to write some account of my life and what I may know and remember of Father, Mother, and Grandparents that they may have some idea of those most of them have never seen, do so quite willingly. . . . Sometime between 1780 and 1790 there lived in Cambridge, England, Henry Scaife and his wife Sarah with their two children Jeffery and daughter Sarah. The Father was a bookbinder by trade. Being of an adventurous and inventive turn, he concluded to go to the 'new world,' i.e. United States of America, and see if he could not do better there than in the old country. So leaving his little family in Cambridge he came to Philadelphia, and after remaining there a short time and hearing wonderful accounts of the riches and beauties of the West Indies he shipped out to the Barbados."

In the meantime William Gazzam, who married Henry's sister Elizabeth, determined to emigrate to America. He was an eminent journalist and was given to expressing his views in favor of human rights and the principle of the Declaration of Independence with a vigor displeasing to King George III (who had amply proved his lack of sympathy with such ideas in the recent American Revolution). One of Gazzam's friends was later to be executed for revolutionary activities and William also had given indiscreet

support to the brewing revolution in France. In short, the English climate grew so unfriendly that he found it advisable to depart with his wife and nephew Jeffery in considerable haste.

"They had intended to bring the boy, then in his eighth year, to Philadelphia to join his father there," the Scaife memorandum continues. "After the voyage of nine weeks they arrived in Philadelphia and found that the father had gone to the Barbados. After a time word was received of his death there. This threw the care of little Jeffery on his Uncle Gazzam, who had engaged in merchandising in a firm named Taylor, Jones & Gazzam. When the yellow fever broke out in 1793, Mrs. Gazzam was stricken and died. About this time Mr. Gazzam 'bound' Jeffery to a Thomas Passmore of Market Street, Philadelphia, as an apprentice to learn to make tinware and japanned ware where he continued until the end of his apprenticeship of seven years. Mr. Passmore, liking him, made Jeffery foreman of his establishment employing sixty men. In the meantime Mr. Gazzam having married Miss Ann Parker of Philadelphia moved to Pittsburgh where he formed a co-partnership with another Englishman named William Borrett. Their business consisted of many things including a country store and a livery stable and he concluded to bring out his nephew Jeffery Scaife from Philadelphia and open a manufactory for tin, copper, sheet iron, and japanned ware which was very much needed in this part of the country. Pittsburgh was but a village. I ought to have said that in the year 1801 Mr. Borrett being in Philadelphia purchasing goods and selling their western produce by the instructions of Mr. Gazzam brought out Jeffery Scaife now grown to be a young man. Before leaving Philadelphia he selected tools and materials for the new business to be commenced here...."

The community in which Jeffery thus cast his lot lacked almost every convenience now associated with urban life. There were no banks, no hospitals, no stagecoach lines, no street lights, no reservoirs. The new arrival could almost take in at a glance the entire settlement, comparing unfavorably to a dilapidated crossroads village of today. Muddy, unpaved streets lacked footwalks,

while sand holes and gullies running from the rivers posed shocking traffic hazards. Hogs, dogs and children wandered indiscriminately underfoot; ponds and puddles abounded, the haunt of wild ducks.

The most numerous and prominent of all public buildings were taverns, and the life of the town reflected their boisterous and universal influence. The citizenry imbibed with particular enthusiasm their native product, whiskey. The ladies as well as the men,

William Borrett. In 1802 he, William Gazzam, and Jeffery Were Partners. He Became Jeffery's Father-in-Law.

the clergymen along with trappers in from the hills, took their dram. Every family kept a barrel in the house; and there was no Sunday closing of either bars or home hospitality.

It can hardly be wondered that city fathers of the time had to draft laws to curb wild riding through the town and beating of alarm drums at night. The throwing of stones at the constable's window was complained of as a popular pastime. On the grimmer side, gangs of thieves nightly prowled the pitch-black alleys, while burglaries had become so frequent the town folk were agitating for a night watch.

But the settlement stirred with vitality and evidences of growing commercial importance. True, most houses were of rough-hewn logs, their windows of six-by-eight inch glass panes making them appear loopholed rather than lighted. In new construction, however, these were being supplanted by some clapboard and brick dwellings, the latter often incorporating bricks pilfered from old Fort Pitt, now crumbling since the roll-back of the Redskin frontier.

The white wooden spire of the two-story brick courthouse and town hall, already grimy from coal smoke, soared in lone dignity above the scene. From another public building, a semicircular market house with butcher stalls in the Diamond, drifted farmyard odors. Thirty mercantile stores offered their wares; and shops of glaziers, carpenters, hatters, bootmakers, blacksmiths, bakers, tanners, coopers, and a score of other trades stood side by side with the dwellings. Infant industries, a glass works, nail manufactory, a shipyard, ropewalk, brick yards, echoed their sounds of labor.

Trade, the through-passage rather than production of goods, primarily engaged the people. It was bespoken by drays shuttling to and from the barges and keelboats with grain or flour, whiskey, glass, dry goods, apples, buffalo robes, guns; by wagons readying for the trip East; by sheds piled with merchandise. Pittsburgh's three great rivers, the Monongahela, Allegheny, and Ohio, opened the roads to this commerce, though few could yet foresee that they would also decide the city's role as the manufacturing center for the growing West.

However else Jeffery appraised the settlement, he must have gladdened at its nearly competitorless market. The city's first directory, *Cramer's Almanac* of 1802, lists only one other tin plate worker and no japanners. Consequently the site had been well chosen for these trades, which were then widely in demand. Japanning, incidentally, was the art of coating metal with varnishes, and drying and hardening it in stoves, for use in various household articles. At that time, long before the development of

plastics and new metals, kitchens were incomplete without tin and copper ware. These products were also essential in building, in shipyards and in industry.

The partners, Borrett, Gazzam and Jeffery Scaife, opened their bid for this market early in 1802. The event could hardly have occasioned much stir among local citizens; yet it deserves more than passing notice in American historical annals. For, unknown to himself, Jeffery thus founded a business destined to survive for one hundred fifty years until the present day. So firmly did he lay his foundations in this year of 1802 that today the Scaife Company is still growing, and is one of the nation's very few firms that can trace its progress from father to sons, under the ownership and management of the same family, from such a distant origin.

Flood, fire and time have carried away all but fragmentary records of the firm's first years. We only know the business prospered sufficiently to enable Jeffery to lay a few savings aside. He had still been a British subject on his arrival in Pittsburgh, but by 1804 he was apparently so attracted by this new country that he secured his American citizenship papers.

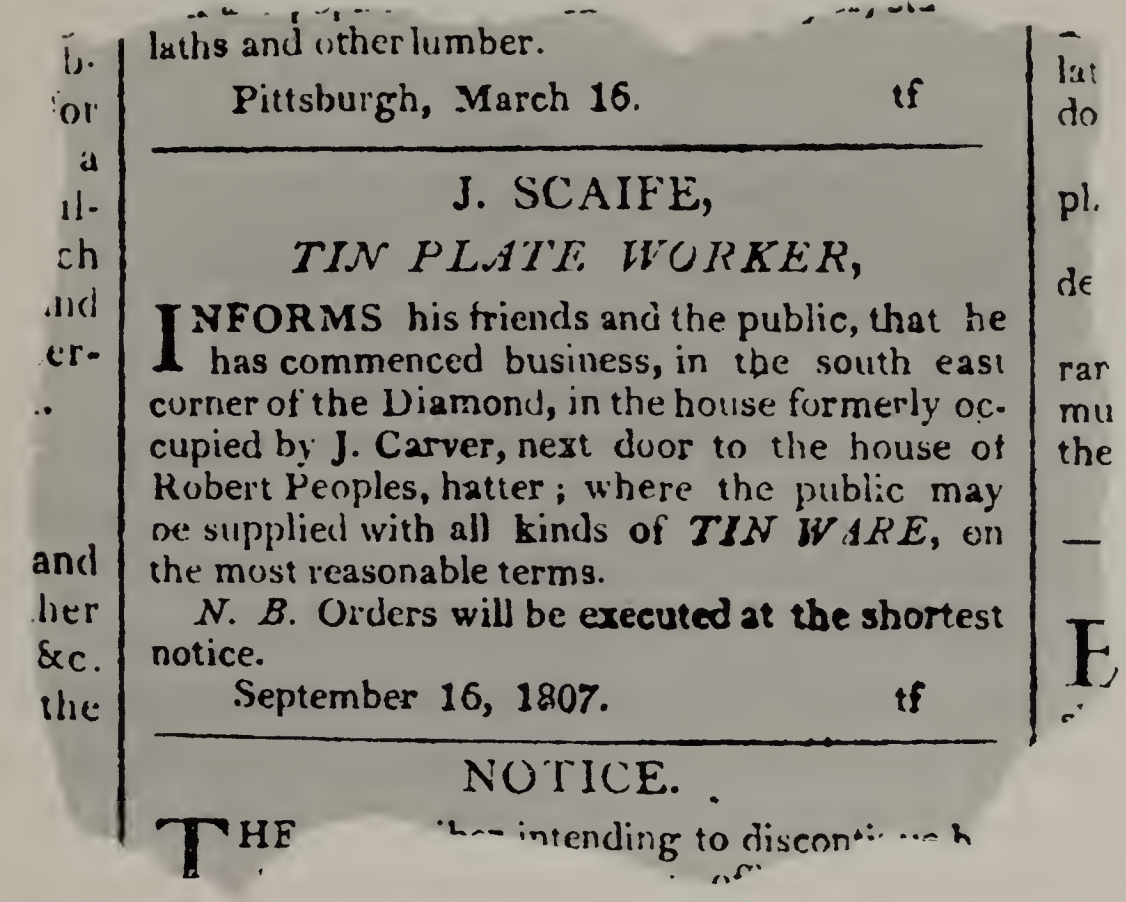
He had good reasons for his confidence. The Louisiana Purchase had opened the mouth of the Mississippi River, previously restricted by foreign regimes, to free flow of trade from the head of Ohio navigation to any port in the world. With this stimulus the town, and in proportion Jeffery's market, grew irresistibly. In 1804 the first regular stagecoach line linked the city with Philadelphia, and the first bank, a branch of the Bank of Pennsylvania, was established, eliminating the need for citizens to entrust all their funds to pockets or strong boxes.

In the columns of the Pittsburgh *Commonwealth* the earliest advertisement of Jeffery Scaife appeared in 1807, when he had decided to branch out on his own (see next page).

The notice meant the disruption of the partnership, and Jeffery's emergence as sole head of an established business. That Jeffery bought his partners out seems a fair assumption. No breach in friendly relations occurred. Jeffery continued to court Captain

Borrett's daughter, who had been born in 1788 and was now nineteen. Jeffery also continued on good terms with the Gazzams, as did his descendants with the numerous Gazzam progeny.

William Gazzam next year was appointed the first Collector of the Port of Pittsburgh by President Jefferson on recommendation of Secretary of State James Madison. He also served as a local magistrate and continued active in liberal politics, at one time initiating a petition for abolishing the limited slavery then



laths and other lumber.

Pittsburgh, March 16. tf

J. SCAIFE,

TIN PLATE WORKER,

INFORMS his friends and the public, that he has commenced business, in the south east corner of the Diamond, in the house formerly occupied by J. Carver, next door to the house of Robert Peoples, hatter; where the public may be supplied with all kinds of *TIN WARE*, on the most reasonable terms.

N. B. Orders will be executed at the shortest notice.

September 16, 1807. tf

NOTICE.

THE [illegible] intending to discon[illegible]

existing in western Pennsylvania. Of his sixteen children, by two wives, several sons participated actively in Pittsburgh community life. One in particular, Dr. Edward D. Gazzam, became an outstanding local leader, being associated with a great number of political and civic causes. William died in 1811.

Captain Borrett, however, lived on to the hardy age of one hundred, dying about 1855. His name crops up now and then in Pittsburgh records and papers, as for instance in 1808 under an advertisement offering raccoon skins for sale and later as a participant in real estate transactions. We know also that he remarried after the death of his first wife, Lydia, who was the mother of Jeffery's wife. He was buried in the Asbury Methodist Episcopal

Churchyard on the north side of Centre Avenue, which has since made way for a residential and commercial development.

Even in the five years during which Jeffery accumulated the savings to strike out on his own, the industrial pulse of this river community became noticeable. An ever-thickening traffic across the mountains was pouring the vanguard of the second great wave of western migration into the city. Mechanics, speculators, homesteaders, shopkeepers, often with their tools and goods of trade roped in the wagons, trundled in almost daily, some to halt, more to pass on to swell the growing population and market downriver. Among them, as yet unrecognized by themselves or their companions, the men destined to lay the foundations for the future workshop of the world at this obscure trading post were arriving in growing numbers.

By 1807 the first iron foundry had been set up, a cotton factory built, four nail factories and a wire weaving plant were in clamorous operation, eight shipbuilders plied their trade; machinists, lockmakers, gunsmiths, and others soon to create industries were beginning. Jeffery himself faced the competition of seven tin, copper and japanned ware workers, as the grinding rivalry, ever since to mark the city as an arena where only the strong could survive, set in.

"It is inhabited," wrote a Pittsburgh visitor of this year, "by people who have fixed here for the express purpose of making money." Old settlers, who had acquired their property for a song, were described as lording it over even the well-born and bred who had not been so fortunate. The city, in this first decade of the century, grew at the greatest pace in its entire history. By 1810 its population reached 4,768, or a ten-year increase of two hundred four per cent!

The same year on March 10 young Scaife married Lydia Borrett, daughter of his first business partner. As befitted a solvent new husband, he shortly thereafter purchased a lot, including contract for erecting a house, for $500 in the Woods plan. The site extended from the present Fifth Avenue to Diamond Street,

between Wood and Market Streets. The directory of that same year shows that six firms were engaged in his line with a combined trade of $25,000 annually.

The War of 1812 established Jeffery as an ordnance supplier on a modest scale, a role the firm was to fulfill in all its country's major conflicts. As the city blared with martial music, and crowds cheered the "Pittsburgh Blues" departing for service with the northwestern army, Jeffery's shop was turning out sponge and tar buckets for the armed forces. The former were to wet the sponges with which cannons were swabbed and the latter for the tar used to grease cannon wheels.

"All the young men," wrote Jeffery's wife, Lydia, on February 4, 1813, in one of the few family letters preserved from those hectic years, "are at the frontiers to fight our country's enemies." But the missive had more personally important news to tell—the birth in the previous year of the couple's first child to survive, unexpectedly a boy:

"Since my lying in, I have had good health, likewise the boy," she informed her cousin in Baltimore. "I have not made use of the locket you gave me—as the child is not of the sex we calculated." If the parents could have foreseen his future, they might have been well content. For the boy, born September 5 and named William Borrett Scaife after his maternal grandfather, would play a not inconsiderable part in the city's development.

The first years of his marriage were prosperous for Jeffery and his industry. Pittsburgh, its sinews revealed to the nation in the war, awoke fully to its role as manufacturer for the West; and hummed with an unprecedented increase of productive facilities. By 1817 the town's tin plate and copper works alone were employing one hundred hands, grossing an annual $200,000, or eight times as much as the figure shown in the 1810 census.

Jeffery's eldest son began his schooling at the famous Pittsburgh Academy, later to become the University of Pittsburgh, the president of whose board of trustees is now Alan Magee Scaife, great-great-grandson of Jeffery, and chairman of the board of the

Scaife Company. However far William's education went, it inculcated in him a burning, life-long interest in science, literature, and religion. From his earliest days he took a lively interest in the shop, for family tradition speaks of his exhibiting handiwork at the age of nine which compared well with that of the workmen. In his teens he joined his father at the workbench.

In 1818 Pittsburgh celebrated its prosperity by building the first bridge over the Allegheny, followed shortly by one over the Monongahela, thus replacing the tedious ferries. The State Penitentiary and a public poor house were begun. Then, on the heels of a lowered tariff, the nation's first great industrial depression struck. From 1819 to 1824 Pittsburgh industries suffered perhaps their all-time greatest paralysis, many going out of business or suspending. Jeffery's stood; but that it was badly shrunk can be read in the statistics of the tin and coppersmiths annual output, which fell in 1820 to $45,000.

In the deadened streets, however, Jeffery and his fellow townsmen must have gazed with the stirrings of hope at that majestic new invention, the river steamboat, whitening the waters off the Point in ever greater numbers. In 1811 the first such craft had been built at Pittsburgh; but the bright dreams of those who watched it depart were cast down when it failed to make its way back against the river current.

Talk ran that no boat could be built powerful enough for river work, until the *Washington*, in 1817, made her historic run from New Orleans to Louisville at better than four times keelboat speed. The steamboat era had begun. It, chiefly, sustained Pittsburgh through the lean years; and, as a protective tariff lifted the depression fog, it brought great new industrial activity to the city.

Pittsburgh celebrated its revived trade with its greatest festival to that date to welcome Lafayette in 1825. Soon after, the Sligo Iron Works, one of the town's great early industries, was established. In 1827 at least three to eight steamboats were constantly in port, and by year's end freight handled reached the then astounding total of 15,250 tons. Industrial growth responded; and there

were at that time four hundred thirty-eight shops and factories operating in the city.

Jeffery's establishment had been moved by 1826 to the east side of Penn Street between Bell's Alley and the Monongahela, approximately on the site of old Fort Pitt. In this year he was one of eleven tinners and six coppersmiths, but the demands of the new steamboat trade, which Jeffery from the start helped supply, seemed to make work for all.

By 1831 the founder of the Scaife Company thought so well of Pittsburgh prospects he refused a Philadelphia cousin's offer to send his third son, Thomas, there to apprentice in business. Was not the western end of the Pennsylvania Canal completed, the plan well advanced for a reservoir, as well as for gaslighting the streets? Even a theater (questionable though the morality might be) was soon to be erected. Pittsburgh, in Jeffery's view, need not take off its hat to Philadelphia on any score.

The last of the second generation of Pittsburgh Scaifes, Anna Mary, was born in 1831. Jeffery and Lydia had a total of nine children, of whom seven survived childhood. Of these, this history deals chiefly with William B., although young Lydia will be mentioned later in this book as a business associate, in a modest way, of her eldest brother.

The business was continuing strong. Friends of the family, Ephraim and Samuel Frisbee, had established a new boatyard nearby, which promised still more work for the Scaife shop. The town's expanding industries, which now boasted thirty-two iron establishments alone employing over 1,000 hands, seemed to assure the future.

In 1832, after thirty-one years of unremitting toil in which he had sired the Pittsburgh line of his name, launched the Scaife business, and made his humble contribution to laying the foundations of Pittsburgh's industrial future, Jeffery Scaife, aged fifty-one, retired from active work.

An agreement, itself lost but mentioned in another document, indicates his final business act was leaving his tools and store

goods in trust for his second son, Howard W. No explanation of this partiality has come to light. William B., in whom Jeffery had complete confidence, was left to carry on the business without further props than his education and the start in trade already given. After all, Jeffery had enjoyed no more.

In future years the old gentleman is mentioned now and again as puttering about in William's shop, and apparently handling quite a number of odd jobs on his own from time to time, being of too active a nature to stay away from his old stamping grounds. He died November 3, 1847, at the age of sixty-six, while Pittsburgh and the Scaife plant were producing for another war, the conflict with Mexico which had broken out the year before. It is unfortunate that no photograph or painting of Jeffery has survived, as it would have been interesting to have a complete pictorial record of the various heads of the concern.

II

The Second Generation Takes Charge

1833-1848

During 1833, when William took over the Scaife business established by his father, Pittsburgh had hard times. Cholera stalked the city, and a day of fasting for deliverance was decreed. President Jackson's withdrawal of deposits from the Bank of the United States shook local finances.

But the following spring brought in the first freight boat to traverse, with cargo intact, that wondrous engineering concept, the Pennsylvania Canal. It ran by rail and water from Philadelphia and by portage railway over the Alleghenies to Pittsburgh. End of the long road was reached at a canal basin where the plaza of the Union Station now stands, after the canal boats had crossed the Allegheny River by an aqueduct at the site of the present Pennsylvania Railroad Bridge. From here it continued through a tunnel to locks leading to the Monongahela River.

This waterway teemed with an over-capacity of traffic, proclaiming Pittsburgh had met the Erie Canal's threatened monopoly of western trade; and a following industrial upsurge placed William on his feet as a self-supporting young tradesman. The same important year saw him take another decisive step as recorded on the flyleaf of Jeffery's Bible:

"William Borrett Scaife, married to Miss Mary Frisbee by the Revd. Thos. Hudson on 23d December 1834."

The bride, aged nineteen, was the daughter of Ephraim Frisbee, the Pittsburgh shipwright. Her grandfather, in youth a Lieutenant in the Revolutionary War, had later helped build Robert Fulton's *Clermont*. In fact, her family can be traced back to the eleventh century in the Domesday Book in England. Edward Frisbee, a

direct ancestor, was one of the first settlers in Branford, Connecticut, where he was married in 1644. No record of his birth has been found, but he died in Branford May 10, 1690. It is believed that he came to this country from England with his family in company with early settlers of Jamestown, Virginia.

Mary had grown up a neighbor of her husband. She was destined to bear him thirteen children, eleven of whom would reach maturity, to share uncomplainingly in his bitterest struggles, and to outlive him by over a quarter century. Their union was to enjoy unbroken harmony, while its inspiration and responsibilities were to shape William's career.

To provide fittingly for his vivacious wife, who as a girl of ten had met and charmed the aging General Lafayette on his Pittsburgh visit, William's trade resources must have appeared disappointingly limited. With youthful enthusiasm, he cast about to raise capital for expansion. Thus, on February 24, 1835, just two months after the wedding, a partnership was consummated with McClurg, Wade & Co. The alliance was destined to run a difficult and disappointing course.

McClurg, Wade & Co. were iron founders, manufacturers of the first locomotives in Pittsburgh (used in connection with the canal railroad) and listed as employing two hundred ninety hands. Owners were Alexander McClurg, son of Pittsburgh's first foundryman and an outstanding local ironmaster, and Major William Wade, builder of the Allegheny Arsenal and the Fort Pitt Foundry. The contract, which linked William's fortunes with these established industrialists, provided:

"That the said parties have agreed to enter into a partnership for the purpose of carrying on the tinning, coppersmith and sheet iron working business. . . . The said McClurg, Wade & Co. agree to furnish whatever capital, and stock of materials may be necessary for commencing the business advantageously, not however to exceed in all the amount of three thousand dollars. The business to be carried on under the name of William B. Scaife & Co., and is to be conducted by said Scaife exclusively; who hereby

agrees to devote the whole of his time and attention to the said business. . . ."

The partnership launched operations with the largest Scaife payroll to date, all of ten hands. If they received prevailing wages, the unskilled workers probably made sixty-odd cents a day, while the craftsmen may have been paid as much as $1.25 daily. These were by no means starvation wages, for the dollar had substantial

William B. Scaife as a Young Man

purchasing power; in fact, the necessity for meeting such a pay roll helps explain William's need for new capital. The first month, however, proved to be the new firm's most prosperous; soon trade fell off and by July William B. Scaife & Co.'s roster of employees had plummeted to a bottom level of three.

Only very slowly, under adverse business conditions, did the tiny company fight its way back, showing an average of six workers in 1836, and of eight in 1837. The finances of the country had been severely unsettled by the President's overthrow of the central bank. As the government demanded land payments in gold and silver, the whole credit fabric collapsed in the prostrating

panic of 1837. Specie payments were suspended. Committees labored to collect food and clothes for the needy thronging Pittsburgh streets. Many businesses failed.

Crippling aftermaths dogged the commercial community, in the form of scarce money, tight credit and unpaid debts, for four years.

Through the peak panic period of 1837-39, the partnership at least proved its staying powers. The pay roll was kept stubbornly at eight hands in the vain hope that customers would pay. William held on at the price of mortgaging his future to his partners. By unceasing efforts he expanded services, products, and sales outlets beyond his father's scope. The company advertisement in *Harris' Pittsburgh Directories* of the time reflects this various trade:

WM. B. SCAIFE & CO.

MANUFACTURERS OF

TIN, COPPER,

AND

SHEET IRON WARE,

NO. 12 WOOD STREET,

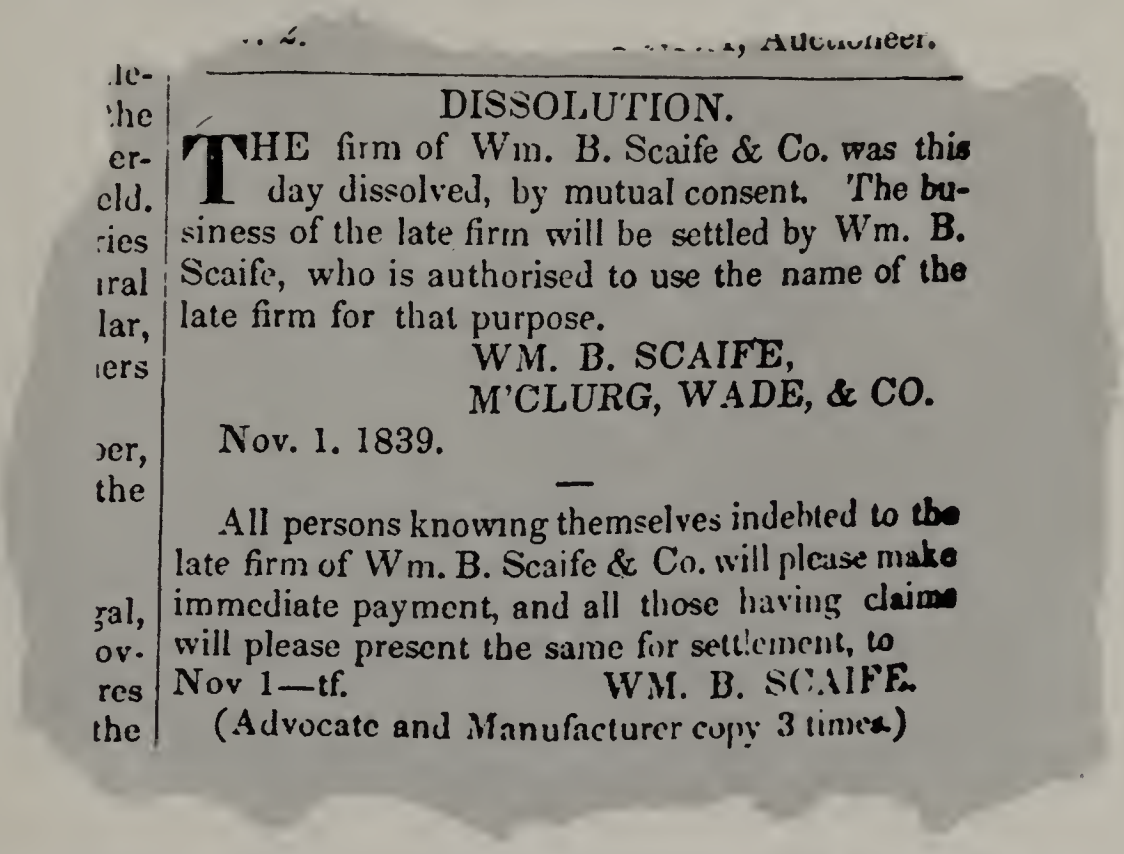
Near the Steam Boat Landing,

PITTSBURGH.

Constantly on hand, or made to order, Patent Cooking Stoves for Steam Boats, Hotels or Families, Iron Chimneys, Copper Pipes, Pumps, &c. for Steam Boats or other purposes, Brass Kettles, &c. &c. with every other description of Tin, Copper and Sheet Iron Ware.

Regardless of such progress, accounting figures continued to tell an anything but encouraging story. William, alone, owed his

partners some $2,600. The precarious state of the company, and of his other hard-pressed local interests, brought Alexander McClurg back from residence in Philadelphia to see what he could salvage. Since financing indefinitely could not be expected of McClurg, Wade & Co., perhaps both parties came to feel that the most practical hope of clearing up William's debt lay in his assuming ownership. The decision taken was reported in the following advertisement in the Pittsburgh *Gazette:*



DISSOLUTION.

THE firm of Wm. B. Scaife & Co. was this day dissolved, by mutual consent. The business of the late firm will be settled by Wm. B. Scaife, who is authorised to use the name of the late firm for that purpose.

WM. B. SCAIFE,
M'CLURG, WADE, & CO.

Nov. 1. 1839.

—

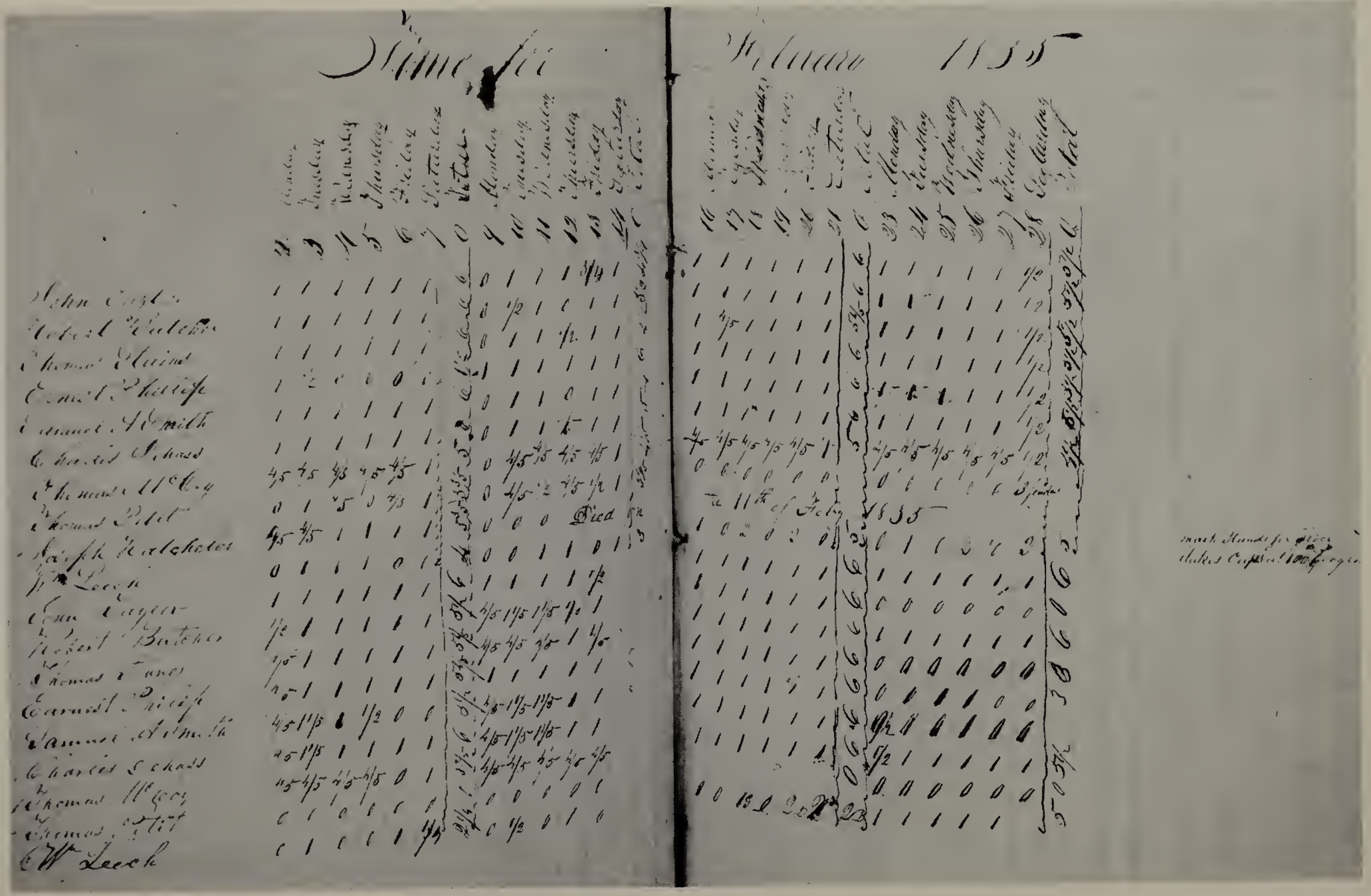
All persons knowing themselves indebted to the late firm of Wm. B. Scaife & Co. will please make immediate payment, and all those having claims will please present the same for settlement, to

Nov 1—tf. WM. B. SCAIFE.

(Advocate and Manufacturer copy 3 times.)

Liquidation of stock was completed on November 16, 1840, when William purchased much of the defunct firm's working equipment at a "fair cash value" of $1,089, paid by his six-month note. This brought his indebtedness to his former partner to $3,660, a formidable obligation for a young man re-entering trade alone. Yet he had gained what he bargained for from the partnership, a broader business buttressed by substantial assets in machinery and tools.

William now began a new stage of his business career. The first daguerreotype portrait of this second generation Scaife, probably taken shortly after that time, appears in this chapter. It gives a revealing impression of him at a period when he was entering on increasing responsibilities in business, in civic and in family life.



Earliest Surviving Pay Roll of the Scaife Business, February, 1835

His first child, Emma, had been born in 1835, followed in 1837 by a son, Oliver Perry, named for a good friend, Oliver Shiras, and for the victor of the Battle of Lake Erie. Oliver later became his father's partner and closest associate, his vigor, inventive ability and business acumen contributing substantially to building the company. In 1843 another daughter, May, was added to the family. In 1844 came the birth of the future head of the Scaife interests, Charles Cooke, named for a Methodist preacher and editor of the *Christian Advocate*.

William's scientific and intellectual bent found outlet in his organizing of a library for the Wm. Wirt Literary Institute, of which he served as librarian and conference committee chairman. The Institute met in Philo Hall, Fourth Street between Wood and Market, evidently for discussion of assigned subjects.

"The project of the Library," William wrote Isaac Harris (publisher of the *Intelligencer* and *Harris' Directory*) on July 26, 1839, "was only set on foot in November last. . . .

"The means of the Institute being limited . . . it was determined to procure none but the most select standard works, and constitute it a reference library. . . .

"The whole number of volumes is only three hundred among which—the last quarto edition of *Encyclopedia Britannica*, twenty-five vol., believed to be the only copy in this city—we had to send to England for it—*Encyclopedia Americana*, thirteen vol.—*Niles Register*, fifty-five vol.—*Harpers Family Library*, eighty-three vol.—with many rare works which are not to be had in Book Stores here."

Among dozens of letters which William wrote soliciting books for this project are several to Senator James Buchanan. In one report to the future President he proudly confided: "Since the foundation has been laid for our Library, we have succeeded thus far beyond our expectations. We have brought together a larger amount of works relating to the history of our country than can be found elsewhere in our city."

In another letter William speaks of hearing a "splendid aboli-

tionist speech" at the Library, adding with gratification that it was delivered by "a young man who is an humble mechanic."

Likewise close to his heart was the Methodist Episcopal faith. Originally attending the stirring services of the Church at Smithfield and Seventh (picturesquely dubbed "Brimstone Corner"), he later became a leader in establishing a sister congregation. In this cause, on April 30, 1841, he solicited one David Greer: "The trustees of the M.E. Church, Scott's Fields, desire me to inform you that they have determined to build a brick church. . . . Should you still feel disposed to contribute stone sufficient for the basement . . . it will be thankfully received."

Successful completion of this project, and his role in its activities, is told in a notice of January 19, the following year, in the *Christian Advocate:*

"THE ASBURY SABBATH SCHOOL

"This school is taught in the new Asbury Chapel in Scott's Fields. . . . We have not been in operation two months, and nevertheless, have about one hundred scholars. . . . On New Year's Day we had a delightful celebration. . . . At ten o'clock the exercises were regularly commenced by singing, prayer and an address by Rev. J. D. Read. . . . A sufficient amount was raised to pay for the collation . . . and for a package of books out of which one was placed in each little pupil's hands.

J. Woodwell
W. B. Scaife Superintendents"

Besides being an abolitionist and an opponent of gambling, William also conducted a lifelong personal temperance crusade. He conscientiously read, and advertised in, the temperance-slanted *Christian Advocate*, edited by friend Cooke. The strength of his conviction burns in this letter, February 7, 1840, to friend John H. Burton in Erie, Pennsylvania: ". . . It is a matter of rejoicing for the friends of temperance and good order to receive the account you give us of the progress of the cause in your District,

may it go on and widen, and widen; deeper and deeper; until our whole Country is taken in, and not have it said, that two thirds of our nation, is represented by sots; may this be the desire of every friend of temperance and let him act upon it—and soon the same joyful news will come from every mountain and valley and only die away with the death of Intemperance."

Leaves from the company's early accounts, dating from 1839, show trade with almost every type of the city's industry: engine-builders, iron-workers, saddlers, confectioners, glassworks, bucket makers, churches, even a Grecian Bath builder. Dozens of familiar local names, such as Dravo, Denny, Bakewell, Shiras, Murray, Spang, Wightman, Gillespie, begin to crop up on the pages.

Another significant trend was his interest in manufacture of patented articles as distinct from contracting. Stoves, the first Scaife products made under patent, were produced in the second half of the 1830's, and continued well past the middle of the century. Not so fortunate proved his first independent franchise, namely for Neil's lamp, which was prematurely voided by a breach of contract by the patent owner. A more intriguing invention, marked by that ingenuity always dear to William's instincts, soon replaced the lamp. It came to his attention in the following advertising dodger:

ESPY'S PATENT CONICAL VENTILATOR.

By this apparatus Ships, Vaults, &c., may be kept free from foul air, and chimneys which smoke from the wind, are effectually cured.

About *forty* of these Cones have been put on the Capitol and President's House, and they have cured in every instance. When there is a strong breeze, the current of air is sufficient to carry up handkerchiefs and hats, through a canvass bag, from the lower part of the ship to the upper deck, and so out into the air through the mouth of the Cone. This experimeht was witnessed by the members of the Court Martial, now in session, on board of the North Carolina at New York.

Persons wishing to purchase *Rights* may address the Patentee, James P. Espy, Washington, D. C., or S. W. Dewey, New York.

The reader may satisfy himself of the power of the machine in time of wind, and it has no power without wind, by putting a flake of cotton in the lower end of a small model, and then blowing on the apex of the Cone, the cott[illegible] will fly [illegible]nd out at the mouth of the Cone. My

William nibbled at this bait, paying $50.00 for the privilege of making twenty-five of the Espy Ventilators with the right to

make any number thereafter at $2.00 royalty each. On the following January 25, 1843, he began advertising in the *Christian Advocate* as follows:

"Cure for smoky chimneys. I have made arrangements with Doct. Espy by which I am enabled to furnish his Patent Conical Ventilator for making smoky chimneys draw well. I will make them of any size at short notice. W. B. Scaife, 8 Wood Street."

Ventilators are henceforth mentioned now and again in Scaife notes and records, and their fabrication proved a continuing if minor shop activity for many decades. Eventually the firm became an erector of large ventilating facilities in its roofing work for industrial plants.

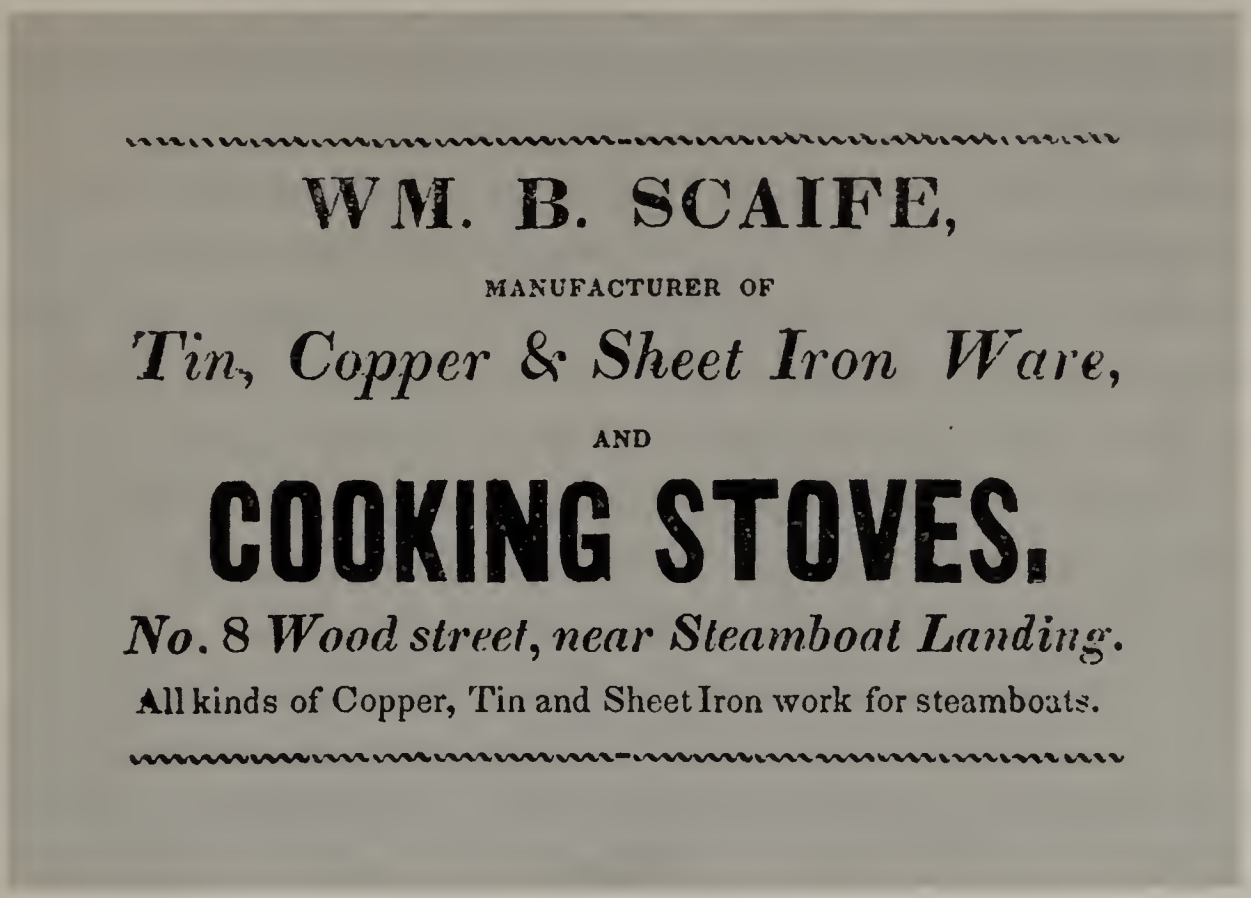
Along with his manufacturing efforts, William struggled endlessly with intricate and hobbling problems of credit and money, born of a rudimentary banking system. This was the businessman's burden of that day, as heavy an inconvenience as modern bureaucratic forms and taxes.

He wrestled also with an irregularity of transport unthinkable in modern times. His letter of May 19, 1839 to his brother-in-law, Roswell Frisbee, at Randolph, Tennessee, mentions: "Water was let into the canal last Monday and the boats are beginning to arrive rapidly." The remark dramatizes the fact that this vaunted highway to the East was drained and non-operative in winter months. Winter likewise suspended steamboat transport as the rivers froze over, while summer low water was likely to effect an equally depressing stoppage of trade.

Despite such handicaps, the very growth of the town kept most industries hustling. The 1840 census showed Pittsburgh and environs housing 55,583 souls. Its manufactures were grossing $12 million annually. It incorporated sixty houses of worship, one hundred schools, nine banks and insurance companies and twenty newspapers. The pressure of trade is revealed in a terse phrase of William to Roswell on April 21, 1841: "I am *driven* with business. It has been much better than I expected."

His advertisement of that year in *Harris' Directory* suggests a

growing concern with steamboat work as the probable source of his increased activity:


WM. B. SCAIFE,
MANUFACTURER OF
Tin, Copper & Sheet Iron Ware,
AND
COOKING STOVES.
No. 8 Wood street, near Steamboat Landing.
All kinds of Copper, Tin and Sheet Iron work for steamboats.

Then, as 1843 wore along, William launched on an ambitious new venture, the details of which remain shrouded in mystery. It appears to have been no less than the galvanizing business, attempted a half-century before the Scaife interests would adopt it as a process of their modern plant. The undertaking involved expansion to a new, separate shop, but has left no record save of the calamity which overtook it. A provokingly incomplete notice in the *Pittsburgh Chronicle* of September 4, 1843, tells all we know:

"On Saturday night, about half past 11 o'clock, a fire broke out in the wooden building on the corner of Wylie and High Streets, formerly occupied as a City Hospital, and was totally destroyed. We did not learn the amount of the loss. It has lately been converted into a shop for the purpose of galvanizing iron so as to make it look like copper, by Mr. W. B. Scaife, tinner and coppersmith, of this city—Mr. John Quinn occupying one end as a carpenter shop. We understand Mr. Scaife had but just commenced, and was manufacturing some of the articles for several Revenue Cutters now building in Baltimore. . . ."

To William the fire must have dealt a telling financial blow. It almost surely put a stop to what had appeared as a promising new business departure, for no future mention of galvanizing by the Scaife firm appears in discovered documents of his time, although galvanized products were used to a great extent beginning in 1854.

Pocketing his losses, he stubbornly turned to salvaging his regular trade. Due no doubt to his straitened circumstances, he is listed next year as sharing the building at 4 Wood Street with James Black, retail grocer, and Wm. Noble, upholsterer; and then in a year or so he began to make a recovery. But the old adage about misfortunes' coming in threes was to prove true of William's personal nemesis of fire. A greater disaster lay just ahead, not only for him, but also for much of Pittsburgh.

On April 10, 1845, the town had been suffering from two weeks of hot dry weather. The morning breeze, which seemed to promise relief, had dropped at noontime, when a washerwoman's fire spread to a shack at the corner of Second and Ferry Streets, only three blocks from William's shop.

At first there appeared little danger; but as the fire engines went into operation they produced only feeble streams from the low water in the reservoir. Then a sudden west wind swept on the city. The bells of the Third Presbyterian Church had hardly clanged out their warning when the flames surged over neighboring buildings with powder-train rapidity.

Pages in almost every Pittsburgh history are devoted to that desperate afternoon: how valiant stands by citizens diverted the fire from the northeast section of the city; how a hurricane of flame cascaded over blocks from Market to Wood to Smithfield to Grant, to Ross and beyond, consuming this entire area between Third and the Monongahela River and overlapping at points as far as Diamond Alley; how with sundown the conflagration died as suddenly as it began.

What the flames left in their path is graphically told by the editor of the *Gazette & Advertiser*, after touring the ruins next morning:

"The appearance of things is awful—nothing but an immense forest of walls and chimneys is visible and desolate heaps of brick and mortar. . . . Piles of burnt and partially consumed Coffee, Sugar, Nails, Iron, Cotton, Rope, etc., etc., were scattered along (the Wharf). Of the Monongahela Bridge nothing remains but a long line of burnt timber across the river. . . .

"The rapidity with which the fire spread was most remarkable. The whole of *South Ward* containing seven to nine hundred houses, was consumed entirely in the space of two hours. From the time the fire reached this Ward, across Wood Street, until it spread to every part of it, there was scarce an interval of half an hour.

"The Monongahela Bridge took fire at the north end, next to Pittsburgh, and the flames roaring and crackling through with railroad speed, and from the time the fire commenced until it was prostrate in the river, only TEN MINUTES elapsed.

"The wind shifted at various times and created excessive dread in other parts of the city. All the stores along Market Street, in the Diamond . . . were stripped and packed up. . . ."

Finally, a particularly mournful financial note, "Hardly one safe out of ten, exposed to the fire, saved anything in them. . . ."

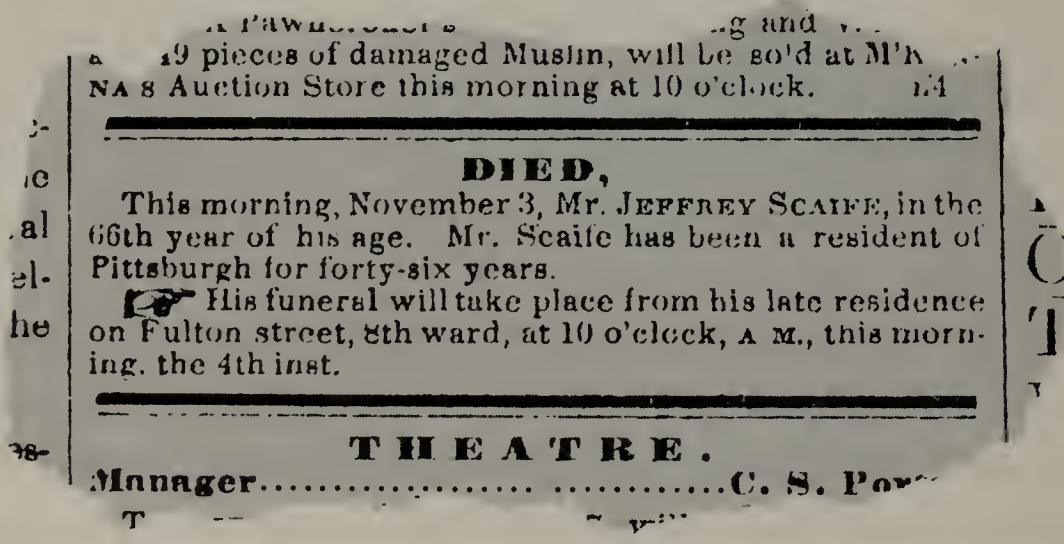
In dry statistical terms, twenty squares, covering fifty-six acres, with nine hundred eighty-two buildings, representing a valuation between $5 and $8 million, were wiped out. William Scaife's share in this loss, as reported in one listing of damages, was $3,000, but with the note appended, "partially insured." The insurance may have been even more "partial" than the figure shows, since almost all of the town's insurance companies went broke attempting to meet claims.

In the universal destruction brother Thomas' grocery shop also burned down.

The state and nation rallied to Pittsburgh's aid, sending in $199,566 in contributions to the needy. Burned-out business establishments were freed from taxes for two years. The city plunged into rebuilding with such vigor that 2,500 new structures were begun within nine months. William recommenced business at 125

First Street, approximately the location where the company was destined to continue until 1916; and soon again was putting a shoulder to the wheel of Pittsburgh's progress.

Meanwhile the burden of years was beginning to affect the older generation. "Father is getting very feeble and grandfather (Borrett) met with an accident about two weeks since," Thomas wrote his sister Lydia on April 29, 1846. "Some careless carter drove over his foot and knocked him down and unless you are here within a few months I scarcely think you will find him alive and father I think will not be long among us." The prediction came true not long after in Jeffery's case, the *Daily Commercial Journal* of November 4, 1847, reporting:



19 pieces of damaged Muslin, will be sold at M'K
NA S Auction Store this morning at 10 o'clock.

DIED,

This morning, November 3, Mr. JEFFREY SCAIFE, in the 66th year of his age. Mr. Scaife has been a resident of Pittsburgh for forty-six years.

☞ His funeral will take place from his late residence on Fulton street, 8th ward, at 10 o'clock, A M., this morning. the 4th inst.

THEATRE.

Manager.....C. S. Por

Jeffery is buried in Allegheny Cemetery in the lot of his son, William.

A new development, which by this year was crowding Pittsburgh with fresh commerce, was the Mexican War of 1846-48. It filled the town, strategically set at the head of transport to the new scene of conflict, with a seething armament and arms transport activity. The First Pennsylvania Regiment met in the city and shipped out for New Orleans. In the rush to enlist, the complement of ninety full companies volunteered, many times more than could be accepted.

An impressive list of ordnance was being poured out by Pittsburgh works. As in past and future wars, William's shop supplied

sponge buckets for the batteries shipped from Allegheny Arsenal to the fields of Palo Alto and Buena Vista. His major efforts, however, were expended in the much broader field of steamboat fitting. He contracted for work on the government cutter, *Walker*, a schooner-rigged iron ship, one of four Federal vessels building in the city. Principally he outfitted, or let contracts for construction of, urgently needed cargo boats.

His boat-building specialty became so extensive that, to give an integral picture, it is treated separately in the next chapter.

Pittsburgh after the Great Fire of 1845

Three years of Mexican War prosperity, abetted by the energies of the Pittsburgh populace, completed a seemingly magic healing of the scars of the Great Fire. To outward view a new city rose, far more pretentious, on the skeleton of the old. Creditors, meanwhile, had granted in most cases utmost leniency to the victims of the city-wide fire. William, however, who had suffered not one but two fires within five years, had arrived at a day of reckoning; on July 15, 1848, he received the following curt, written warning:

"Sir—

"It appears you are still largely indebted to the assignees of McClurg, Wade & Co. You will please meet us at the office of Mr. Arthurs on Liberty St. on Saturday morning next at 9 o'clock in order to make a definitive settlement of this business. If not then brought to a close *we will be obliged* to pass the settlement into the hands of attorneys.

Geo. Bayard
John Arthurs — Assignees of
Isaac Lightner — McClurg, Wade & Co."

The margins of this letter are literally jumbled with William's pencilled figures. From this painful arithmetic emerged the stubborn fact he had no way of raising the money. The following receipt, signed by the assignees, tells the terms on which he saved his shop:

"Received July 25

Cash	270.84
Note at 12 mo.	1,186.72
Note at 18 mo.	1,220.33
Note at 24 mo.	1,253.93
	3,931.82

"When paid will be in full for monie due by Wm. B. Scaife to the late firm of McClurg, Wade & Co."

The business remained his, but he faced a future of still heavier obligations. To the question of where the money might be obtained, he perhaps sought an answer in his new partnership of the same year, which was to carry him yet farther out on the flood tide of the colorful, risk-fraught steamboat trade of the mid-century.

III

The Steamboat Boom and Bust

1839-1853

"People here appear to be crazy about building boats," William wrote to brother-in-law Roswell Frisbee at Randolph, Tennessee, as early as 1839. It will be necessary for our narrative to backtrack to that period to trace the Scaife role in this development.

William's words were no exaggeration. By the late 1830's Pittsburgh and vicinity had produced well over two hundred steam vessels. Ship tonnage of the Ohio and Mississippi, as computed by one historian, surpassed that of the British Empire or the entire Eastern seaboard. An English engineer, who traveled the rivers about this time, observed that, "The greatest number (of vessels) are those of Pittsburgh and Cincinnati. . . . A great part of (Pittsburgh's) population, are employed in the construction and management of steamboats. . . ."

Scenes such as reported in the Pittsburgh *Advocate* of November 8, 1838 became familiar:

"Twenty steamboats lie in the landing taking in cargo for Louisville, St. Louis, Nashville, New Orleans and 'intermediate ports.' . . . The whole of our broad levee is closely dotted with drays and wagons . . . burdened with the valuable products of our factories or with Eastern goods. . . . The margin of the wharf is absolutely covered to the height of a man with freight in all its varieties; higher up the streets and footwalks, the fronts of the great forwarding houses are blocked up by piles of boxes, bales, barrels. . . . Shippers, porters, draymen and steamboat clerks blend their voices; one is actually deafened. . . ."

William, at his Wood Street site, "near the steamboat landing" as he liked to advertise, and later just around the corner on First

Street, was not one to overlook this accelerated growth of river transport. A constantly larger part of his trade dealt with marine supplies; and Scaife tradition has it that the company made all of the metal products with which steamboats were equipped. The company books record boat contracts which range from cook stoves (advertised before the mid-1830's) to funnels and in some cases the decorative emblems that hung between them, and include such diverse items as portable forges, copper pipe and japanned kitchenware.

Such outfitting linked the Scaife name with those of many historic river craft, such as the *Valley Forge* and the *Paul Jones*, to cite only two of the most famous.

The former was the first iron river steamer, and her launching at Pittsburgh in 1839 provoked a sensation. According to the *Gazette:* "All were astonished. . . . The instance is without parallel. . . . It seems that many came . . . expecting to see the boat sink. They must have thought the truth strange, for . . . she did not leak a drop. Here, then, is a product of Pittsburgh enterprise, the first of any considerable size built in the country, which . . . will afford the safest conveyance. . . . She cannot be sunk, she cannot be burnt, she is proof against explosion, and she runs in almost no water at all. . . ."

"The new style double iron chimneys" for this pioneering river craft were furnished by "W. B. Scaife," according to the listing of sub-contractors in the *Intelligencer* of December 7, 1839. Even more famous was the *Paul Jones*, none other than the ship on which Mark Twain learned his first lessons of the river trade of piloting under the celebrated "Mr. Bixby" and which he has immortalized in the greatest of steamboating classics, *Life on the Mississippi*. Preserved in one of William's sales letters is a rough sketch of the *Paul Jones's* chimney, which William cites as a sample of one of the styles he has made. The price quoted for the funnel was $130.

William's active role in river activities is mentioned in several Allegheny County histories, one of which even attributes to him

the development of towing (actually pushing) freight in barges. Unknown in the early river steamboating, towing multiplied the load a single vessel could transport just in time to save the river traffic from extinction by railroad competition. No further light has been thrown on this phase of William's career, except for the possibly related fact that Daniel Bushnell (who in 1845 made the first widely publicized tow) was a Scaife customer.

Boating interests of Pittsburgh and other towns grew hugely in this decade. By 1847 steamboat arrivals at the city reached the tremendous total of 3,178 annually, an average of better than eight a day. The excitement stirred by such traffic is glimpsed in a letter from brother-in-law William Fairman in St. Louis: "Spring has opened out here in all its beautiful colors—the dust is flying—boats acoming and going in droves, everybody in a bustle and chasing the phantom, money."

After becoming established as a steamboat outfitter, William sometime in the early 1840's began to acquire part ownership in some vessels. At first no doubt this came about involuntarily when default of an owner forced him to take shares in a boat as his payment, since he had no capital to invest. Later he evidently performed some steamboat work on speculation, being encouraged by his wife's family, the Frisbees. Names of several of these noted shipwrights, who first came to Pittsburgh to further Robert Fulton's river boating enterprises, appear frequently on his books; and they worked closely with him.

A ledger, dated 1847, shows a surprising number of steamboat "Adventures," as William's boat speculation accounts are headed. "Adventures" are shown in the Steamboat *Fort Pitt;* in the *Comet*, Captain Boyd; *American Eagle*, Amos Frisbee; the *Arrow; Arrow-line; Germantown; Asia;* and an unnamed boat with Ephraim Frisbee. Account totals, with two exceptions, run to five figures, the highest being $14,286 for the *American Eagle*. Dividends of $812 are also noted for this boat.

William owned, or came to own, a substantial interest in these vessels as well as in several others. A larger share in the *Arrow*

became his in 1848 when William and John L. Abrams agreed "to release all claims . . . against the SBt *Arrow* . . . and that all accounts, money etc. that are now collected or may hereafter be collected shall belong to Wm. B. Scaife. . . ." William was to pay all claims against the *Arrow* "out of a/c collected or sale of said Boat."

Another vessel, the *Arrowline*, is identified in one river history as "a ninety-ton packet built for W. B. Scaife." The *Germantown*, mentioned above, was later reported "lost" (evidently sunk) in Scaife correspondence; and William is revealed as loser in several law suits which resulted. The *Asia* is later described as under his direction. Besides these speculations, scores of boat-outfitting jobs were being handled in these years.

Unfortunately for William, this trade was at first more impressive in appearance than profits. Some "adventures" represented losses, and, as a whole, the steamboat speculations had a slow payout. Indeed, William might have been called "steamboat poor" in the year 1848, when he was forced to negotiate his postponement of the McClurg Wade debt. While he could look to river trade for a livelihood, some drastic change seemed needed to convert it into a profit-making business; and he decided again on a partnership.

The following notice appeared in the Pittsburgh *Post* of October 4, 1848:

"Co-Partnership. William B. Scaife & Captain James Atkinson have entered into partnership under the firm name of Scaife & Atkinson and will carry on tin, copper and sheet iron ware manufacturing. Also blacksmithing in all of its branches at the old stand of W. B. Scaife, First Street near Wood. Particular attention given to steamboat work."

While the terms of this partnership have not survived, one of William's letters states no capital was involved, implying that Captain Atkinson's investment was in the form of services as an assistant. Captain Atkinson was a well known steamboat man of his time. He is identified in one river book as holding an engineer's

license, first class, at New Orleans; others describe him as skipper of Scaife-built boats, the *American Eagle*, originally ordered by Atkinson, and the *Arrow*. His river connections promised good sales advantage to the Scaife shop. By the start of 1849 the partnership was advertising its services as follows:

WM. B. SCAIFE, JAMES ATKINSON.

SCAIFE & ATKINSON,

MANUFACTURERS OF

TIN, COPPER,

AND

SHEET IRON WARE,

ALSO, EVERY DESCRIPTION OF

BLACKSMITH WORK,

No. 125 First Street, Pittsburgh.

☞ Portable Forges, Work for Steamboats, Cheap Pumps, Cooking Stoves for Steamboats and Hotels, Deck Stoves.

A little later, May 29, the item of "Cheap Pumps" was amended with more modern sales appeal in a notice in the *Post:*

"Improved pumps that will not freeze in the coldest weather. Scaife & Atkinson, First between Wood and Market Street."

Meanwhile the California gold rush, which lured 42,000 emigrants to that almost unsettled state in the single year of 1849, boomed Pittsburgh as the pre-railroad gateway to the gold fields. River traffic was swelled by the passage of "Forty-Niners" and their supplies, starting the great tide of migration which would populate the Western states. On the other hand a cholera epidemic

spread up the river from the Southwest, a local monetary depression set in, and a long spell of low water halted shipping even in the canal.

Amid these contrary economic currents, Scaife & Atkinson more than survived. A long list of boats, from which money was due the firm, made William's 1849 pocket notebook read like a river directory. Included were such colorful names as *Leander*, *Alpine*, *Amulet*, *May Queen*, *Eldorado*, *Brunette*, *Maluka*, *Swan*, *Chieftan*, *Swallow*, *and Unckle Sam* (the latter, according to illustrations, misspelled).

The same notebook showed him sub-contracting for boat hulls (having no boatyard himself), and then installing machinery and otherwise outfitting the boats complete for delivery to their owners. For instance, for one captain, he purchased a hull up river as indicated by this entry: "Captain McBride's SBt *Hull*, built by Isaac Hammet & Co., Elizabeth, Pa., for $4,000, extras $168." A later notation shows how contracts were figured:

"Stern Wheeler Boat, Keel 100 ft., Beam 24 ft.,	
Hold 3½ ft.	1,400
Engine 2 Boilers	
2 Cylinders 8 in. dia.	
3½ Stroke slide valve	2,000
Cabin 4 Length Rooms	400
Painting	200
Tackle, Stoves, etc.	800
	$4,800"

Most curious of his notebook entries were several apprentice contracts. The one below, for a six-year term, makes plain that a young man starting in trade one hundred years ago was in small danger of getting rich overnight:

"November 11/50	Terms to George Barr		
16 year old	Till January 1851	(per week)	1.50
Next January	Till January 1852		1.75
	Till January 53		2.25

Till January	54	2.50
Till January	55	3.00

Deduct for lost time.

1171186

50 cts. per week added for each week in last year."

By 1851, steamboat investments began to pay more dividends, and evidently the McClurg Wade debt was settled, for it is not mentioned again. The business was expanding, and at last held forth prospects of substantial prosperity. William found himself so hard pressed to handle its details that he had begun to look about for another junior partner, when a new figure, John M. Okely, entered the picture.

About Okely, other than his influence on William's fortunes, only scant information has been found. His sister, Susan Ann, originally of Baltimore, had married Isaac Wade, a brother of William's former partner; and it seems likely he knew William through this connection. He began his local career as J. M. Okely, grocer, corner of Liberty Avenue and Cecil's Way.

After the Great Fire, Okely worked at Knapp & Totten, leading iron founders. The Okely family history records him as financial manager of Major Wade's Fort Pitt Works, no date mentioned. By the late 1840's he was describing himself in the *Pittsburgh Directory* by the inclusive title of "Iron Master." Later, with no record of the terms having survived, Okely was admitted into the Scaife partnership. He brought to the firm an acquaintance with iron-working, increasingly important in boat work, and a background in financial management. The *Commercial Journal* of February 3, 1851 announced the new arrangement in the barest words:

"CO-PARTNERSHIP

The subscribers have entered into co-partnership under the firm of Scaife, Atkinson & Okely.

WM. B. SCAIFE
JAMES ATKINSON
JOHN M. OKELY"

The firm opened in presumably larger quarters at 119 First (or Front) Street; and on February 18, 1851, a standing card, which continued throughout the year, made its first appearance on the *Commercial's* front page:

> "SCAIFE, ATKINSON & OKELY, *manufacturers of copper, tin and sheet iron ware*, Front between Wood and Market Streets."

To cap this story of advertisements, an elaborate business calling card, on heavy glazed paper, the first such known in Scaife annals, was issued:

Now, for the first time, the Scaife operation began to take on something of the atmosphere of a large business. It was manned by three executive heads. It attracted notable captains, like D. S. H. Gilmore, of whom one biographical sketch reports: "Coming to Pittsburgh, he was introduced to the firm of Scaife, Atkinson & Okely by his friend J. B. Horton, Esq. . . . One of the boats owned by this firm was commanded by Captain Charles Frisbee, with whom Captain Gilmore took charge of the office. . . . In a few years he made for himself a name in the great work of transportation. . . ."

Business looked better as the year advanced. The firm was making a strong bid for the heating trade, an outgrowth of its

boiler and piping work for steamboats. Blacksmithing had become a major activity. Most important of all, William planned a trip to New Orleans, then undisputed capital of the river trade, where he hoped to sign up new business and collect some over-due debts. Leaving the company, as he believed, in capable hands, he embarked on December 2, 1851 on the *Hibernian No. 2* for what was to be his first extensive trip away from home.

The details of this journey, begun just over one hundred years ago, reflect an almost startling contrast to the accustomed conveniences of today. The route, over which airlines now whisk passengers in a routine few hours' flight, required five and a half weeks for William to traverse amid severe hardships. The grimness and risk of winter life on the river were matter-of-factly reported in his diary, from which a few excerpts follow:

"Cincinnati. December 7, Sunday—Steamer *Asia* arrived with Charles Frisbee on board with corpse of their other child. . . . Poor fellow, what a stroke, just recovering from sickness himself to have both (all) his children taken from him. Lord sanctify this stroke to their good. . . ."

Changing to the *Elephant*, a boat operated by Scaife, Atkinson & Okely, William proceeded down river. "December 10, Bless the Lord that I am permitted to rise in the enjoyment of health. . . . SBt *Elephant* dropping into the Canal (at Louisville, Ky.) meets with difficulty . . . on account of several large boats dropping in after her and damming up canal. Worked in canal all forenoon, broke wheels. . . ."

They got out just before dark the next day, but, after repairing the damage, encountered more serious trouble at a difficult passage sixty miles below Louisville. "December 13 . . . about 11 o'clock came to Flint Island, after passing what is called Showl Point safely, but rubbing, just at the foot of the Island, came to a stand. Crew worked hard all day without getting off. Laid down to rest, all hands at work. What a life to lead, no desire for it. . . ."

The next day, being Sunday, put William in a difficult spiritual dilemma. "Here are men who have souls to be saved," he noted,

"who are commanded (by the Scriptures) to regard the Sabbath. What is my duty?" But he did not interrupt their labors as they vainly unloaded, while the water dropped faster than they could lighten the boat.

"Last night very cold," he continued next day. "Men worked completely down. Steamer *Saranac No. 2* came up and stuck fast a few hundred yards above us with one hundred fifty deck passengers and nothing to eat. Sent flour and potatoes to them. . . . Raised steam & all hands sparred, but all unavailing. Ice beginning to run heavy. Boat hard aground across Stream. Ice rushing against the upper side with scratching, tearing, thundering noise, shaking the Boat. All hands still sparring, unloading, etc., but no use.... The Lord only can preserve from all harm, to Him I look.

"December 16 . . . Captain still working his men to get off. River covered with large fields of floating ice. Out of wood and impossible to get any. . . . Flat boat aground near us, men unloading. Hard! hard work. . . . Ice becoming heavier, just thought it would grind the boat up. . . . 2 o'clock, very! very cold, cannot sleep fearing to freeze. Got up, put on three coats, two vests and Buffalo overshoes. Walked about cabin till after 5 o'clock. Laid down with all clothes and mattress over me.

"December 17—River closed with ice above and below. . . . five persons buried off Steamer *Saranac* . . . weather at night beginning to moderate, river swelling.

"December 18 . . . whole crew have worked almost incessantly since Boat grounded, about 10 o'clock began to move with all appliances, about sundown she came into deep water. Nearly all freight ashore or in Barge. River raised about one foot from ice gorging two miles below. . . . Carried another poor deck passenger today from *Saranac* to island and buried, thus within three days eight have been buried from that Boat, very unceremoniously, put in rough square boxes, take in Yawl . . . the deck hands dig a hole just deep enough to cover the box, cover up and leave it. . . ." On December 19 he noted, "Had violent attack of neuralgia . . . last night but relieved it by belladonna and by bathing feet."

Although now floating clear "in a good ice harbor," the *Elephant* needed more water to proceed down the low, ice-bound river. Newspapers were reporting, "the river frozen from mouth to

Sketch of Steamboat Chimney from Order Book

head, most extraordinary freeze within memory," and the Pittsburgh *Commercial* noted, "the river entirely gorged to . . . some distance below Flint Island." It was not till December 29, more than two weeks since William's stranding, that the first boats broke through the lower gorge. Next day a virtual steamboat parade passed upstream, including the *St. Paul*, *Federal Arch*,

Cheneworth, *Ionian*, *Martha Washington*, *Summit*, and *Greek Slave*. Two more, the *Hiram Powers* and *Sacramento* grounded on Flint Island bar, William noted; also, "SBt *Cornelia* grounded . . . got off, laid alongside *Elephant*. Captn. Duncan came on board so drunk that our Capt. got him back to his own boat soon."

The *Elephant* proceeded down river on December 31, picking up the cargo of a sunken flat boat at Derby, and further on having to stop and wait for "the rise to come down." At Shawneetown, the ship took on "about six hundred chickens, turkeys, ducks, geese & pigs," becoming so crowded she had to refuse extra freight urged on her. She then swung into the Mississippi, running at an eight-mile-an-hour clip, and in one night making one hundred ten miles.

As the trip proceeded, William complained, "My jaw frozen with cold, weather freezing." Here and there grim reminders of river risks were sighted, as, "On a bar opposite lay the wreck of the Steamer *Webster* burned a year ago. Many persons lost on her." At Natchez he admired the fine buildings but "learn it is a very wicked place." He reported, "Have much trouble wooding (i.e., getting wood to burn for fuel) on a/c of high banks, some about sixty ft. and the wood on top. . . ." Passing Baton Rouge, he was impressed by, "the State House built of cast iron & white marble in style like ancient castle."

On January 10 the *Elephant* approached its destination amid scenes of almost exotic strangeness to the plain Pittsburgher: "As we near the City, the plantations form one continuous line like a series of White Villages. At 2 o'clock we came to the shipping at the upper end of the City, laying three & four deep, several hundred in port. It is like a dream or a new world. 3 o'clock went ashore at New Orleans. . . . Felt afraid of its wickedness but look to the Lord our God to direct and keep me. . . ."

William's fears were quickly realized. With astonishment he viewed, "the vast numbers who turned out and drink . . . in the most open manner." He also found that trade was conducted in centers like the St. Louis Hotel, where, "The barroom is a spa-

cious rotunda capable of holding at least a thousand persons. . . . This room is devoted to drinking, auction sales of 'Stock,' Steam Boats, Real Estate, etc."

As for such diversion as "bear baits," bullfights, and shows like "Adam & Eve" and "Placides Varieties" then playing, not to mention the lurid night life, he gave vent to his revulsion in the phrase, "this Sodom!" He then plunged into a whirl of business.

"January 12 . . . very much discouraged at hard times, cannot raise money . . . determined to send the *Elephant* to Yazoo River.

"January 19 . . . found Steamer *Flora*, saw Captain Jenkins, sold him *Elephant's* barge for eleven hundred dollars, his note payable 1st May. . . .

"January 22 . . . saw Stephenson, was figuring all day about Stern Wheeler Boat. . . . Wm. Steward called on me at the Hotel about building Hull & Cabin of a Stern Wheeler Boat, he to furnish old hog chains (used to brace the vessel). I made the following estimate for him:

Hull, Keel 131 feet	
Beam 23	
Hold 4½	$2,300
Cabin 13 Length	1,550
Painting	450
Iron Work etc.	250
	$4,550"

He accompanied his prospective client, Stephenson, no doubt for business' sake, to a slave market:

"Found them occupying whole rows, principally one Story houses, on the outside were Negro Men, Women, Girls & Boys. Comfortably dressed, ranged along outside of the houses, like shop keepers expose specimens of their merchandize. We went into one kept by Campbell & Co. . . . On our entering, a bell rang and those that were in ranged themselves in rows around the room, others in the yard hurried in and joined the ranks, each endeavoring to look as well as possible. . . .

"Mr. Stephenson came to buy a woman house servant. As soon as he selected three to select from, we were invited into a private furnished room, and all the women with children were summoned. There a bargaining took place, and talk about age, health, soundness, qualifications etc. after which it was agreed that Mr. S. should take the one with her child home for two days and if she suited he was to pay eight hundred dollars for woman & babe. This seems strange, to deal in human beings. . . ."

Slave Market at New Orleans about Time of William's Visit

Amid such alien surroundings, William clung with particular ardor to his religion. Possibly his happiest hour in New Orleans came when he located with some difficulty a Protestant congregation. "Found an audience of about two hundred plain Methodist looking people . . . a plain looking man bout thirty-five . . . read the XIX Psalm, gave out a hymn. My soul was filled for the privilege of once more joining in worship in the Lord's house. . . . Old men and women shouted out the praises of God just like Methodists."

Failing in frequent attempts to get his steamboat colleagues to

attend divine services, he prayed for guidance one Sabbath morning. Almost immediately he received an inspiration, which seemed to combine business and piety. "At Noon," he recorded, "wrote a letter to Doc. Sehon about building a floating church with iron hull for the Boatmen at New Orleans." This imaginative yet practical proposal came to nothing.

Promising opportunities crowded on him: "January 28—Went over the ferry to Algiers to look at a little iron Steam Ship offered for five thousand dollars, think her cheap. . . . Closed contract with Stephenson for a Stern Wheel Boat. . . ."

The *Elephant* had returned from the Yazoo, and William ordered her loaded for Cincinnati. How profitable her operations were may be gauged from the following entry, "Captain B. H. Perry offered four thousand dollars cash for charter for the *Elephant* four mos., refused it." Perry, however, asked him for an estimate for a hull and engines. Next day "Captain Wells spent the evening with me proposing plans for navigating the Yazoo River and Tributaries. Capt. Alex Grey & B. Martin want a Side Wheel Cotton Boat. . . ."

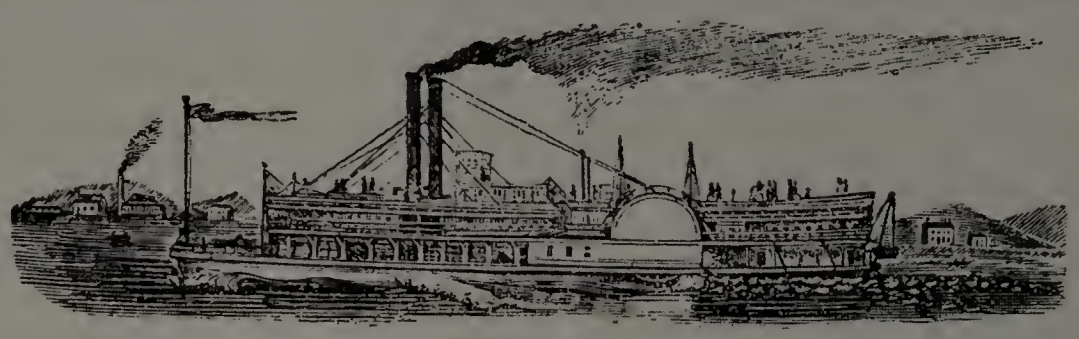
All of course was not smooth sailing. "Find it difficult to make headway against prejudices of old Captains," he wrote, "and want knowledge and acquaintance with Merchants who would be owners."

William was plagued with homesickness; and, after less than a month in town, he learned with great relief that the river at Pittsburgh was about to open—meaning he could return. He recorded his final transactions soon after: "February 5 . . . finished drawings and specifications for (a second) large stern-wheeled Boat for Stephenson & Hill." "February 9 . . . went to Steamer *Delia*. Saw Captain Costello, talked of building a Boat. . . ."

In his month in New Orleans, William had taken in $2,200 from the steamboats *Jane Franklin*, *Salem*, *Asia*, *Elephant*, and (apparently) the *Trenton*, all in dividends on boat adventures. He had sold the *Elephant's* barge for $1,100; closed a boat contract on which he received a $5,000 draft; estimated on boats totaling

$32,300, and a number of others for which figures are not quoted; and collected notes for $2,917. He was surely justified in feeling, as his boat returned to the upper waters of the Ohio, that he was heading into a prosperous business harbor.

The next eighteen months bore out such expectations. Forged work was more actively promoted. Heating jobs continued important. The firm's *Harris' Directory* advertisement for 1852 proclaimed it for the first time primarily a steamboat contracting operation on substantial scale:



W. B. SCAIFE. JAMES ATKINSON. JNO. M. OKELY.

SCAIFE, ATKINSON & OKELY,

First Street, between Wood & Market, Pittsburgh.

STEAM BOATS

BUILT TO ORDER,

Fitted and furnished complete ready for business. Also, all kinds of

Forged Work, Sheet Iron, Copper and Tinware,
Cooking Stoves, Portable Forges, &c.

APPARATUS FOR HEATING BUILDINGS BY STEAM OR HOT WATER.

Newspaper advertising, beginning July 7, 1852, announced new products:

"NEW PATTERN REFRIGERATORS

A NEAT and convenient article for keeping ice and preserves cool.

WATER COOLERS

Ornamented and plain of various sizes. They require

but little ice and keep water cool a long time.

Scaife, Atkinson & Okely
First Street
between Wood and Market"

A credit book for merchants of 1852 gave the firm a sound rating, under Hardware & Foundry Men as, "Scaife, Atkinson & Okely—Pitts 2nd St.-River, blacksmiths—good for contracts." Adding as of August, 1852: "*Good*. Deal in tin, copper, sheet iron ware." A daily card ran in the *Commercial*, leading local paper for river and business news.

Scaife, Atkinson & Okely had just about "arrived," when an alarm bell on the night of September 4, 1852, awakened William to his third catastrophe by fire. The *Commercial* reported not only the event but traced its aftermaths in some detail:

LOCAL AFFAIRS.

DESTRUCTIVE CONFLAGRATION.—At one o'clock on Saturday morning, a fire was discovered in Messrs. Scaife, Atkinson and Okeley, manufacturers of copper, tin and sheet iron ware, and contractors for steamboats, between Wood and Market streets, extending from First to Second. When the flames were discovered, they were in the interior of the buildings, and had made considerable progress rendering it impossible to check them until a large amount of property had been destroyed. An extended alarm was given, which brought the different fire companies of the city promptly to the spot, and in a few moments, several streams were playing upon the building, both from First and Second streets. By the efforts of the companies, the fire was prevented from extending to the neighbouring houses, but the

spacious building where it originated, was entirely destroyed. The property was insured by the Deleware Mutual, Citizen's and Western—the building for $6000, and the stock for $4000, which will partially cover the immediate loss but we regret that the disaster proves a serious loss to the firm by causing its operations to be suspended for a time, and to a large number of its laborers, who are temporarily thrown out of employment. The firm is well known as one of the most important and reliable in this city, and the disaster which has occurred is one that will be felt by the whole business community. We are requested by Messrs. Scaife, Atkinson and Okeley, to return their sincere acknowledgements to the several fire companies of this city, for the determination and efficiency with which they labored on the occasion. The origin of the fire is not known.

Next day the paper went all out to support a comeback:

"ENTERPRISING SPIRIT—The firm of Scaife, Atkinson & Okely, undismayed by their late severe loss by fire, have with praiseworthy determination renewed operations in their old warehouse, situated a few doors east of their late workshops on Second street. Such early exertions recalling happiness once more to the homes of those in their employ, is worthy alike of our praise and admiration. . . ."

The next *Commercial* notice, while not mentioning S., A. & O., emphasized the extent of the calamity, in a single sentence on September 27: "The steamer *Elephant* was sold to a St. Louis company for nineteen thousand dollars."

By this, and no doubt other far-reaching sacrifices, the partners completed rebuilding on October 30, according to the *Commercial*, when blacksmithing works and steam engines were in operation;

and, the newspaper informed its readers, "in two months more, their extensive establishment will be in full blast." It was a propitious time, for shortly afterward, on December 10, 1852, the first cars over the Pennsylvania Railroad's all-rail line from the East arrived in Pittsburgh in the midst of great excitement and celebration, adding an important stimulus to trade.

The firm at first made good progress in getting back on its feet.

Pittsburgh Waterfront in the 1840's

The *Commercial's* shipping column in November listed S., A. & O. copper and sheet iron contracts for the Steamers *Helen Mar*, *John Strader*, and *New York*, built for former associate Captain Gilmore; and a stove contract for the *Neptune*. The partnership was a subscriber to "the extension of the Monongahela Slackwater to the Virginia line"; its credit rating for February, 1853, showed "No change." The first surviving Scaife foremen's agreements date from the same month, promising Michael Grover and George Garrison "fifty dollars for attention as foreman in addition to other wages, payable quarterly."

Beneath the surface of this apparently healthy activity, all was not well. Details remain cloudy, but the basic trouble is plain

enough. Walter B. Scaife, William's youngest son, recalled his father's telling of moneys that had been collected and dissipated, and debts piled up, without his knowledge. In a letter of the following year William blames his own misfortune on having "added

First Pennsylvania Railroad Train Arriving at East Liberty

partners without capital as assistants and then collateral branches," and on "utter carelessness in our book a/cs."

Financial mismanagement evidently was uncovered during the summer of 1853, too late to save the firm, still strained by its recent fire. William watched helplessly as the business structure of a lifetime crashed about his head. He assumed as much of the debt as he was able, an action which resulted in everything he owned being sold out, "even to the kitchenware," according to the recollection of his son, Walter.

In vain William attempted, he later wrote, to effect "an extension with creditors." On October 29, 1853, the assets which

remained were turned over to assignees, to settle the obligations of the partnership. Scaife, Atkinson & Okely was out of business before its last advertisement ran November 21.

Whatever acts led to the catastrophe, it is certain that William blamed, and ever after bitterly criticized, John Okely for it. Okely not long after left the city, advertising his 130 Penn Avenue property for rent. He is not again listed in local directories until 1861, then residing in Allegheny, occupation, "Clerk." He died the next year.

Still on warm terms with William, the other partner, Captain Atkinson, extricated himself from the wreckage by taking command of the former S., A. & O. steamer, *Elephant*. "We welcome Capt. A. back to his old occupation with pleasure," the *Commercial* commented on November 9. "He is one of the best captains on the river," etc. He sailed next day for New Orleans. William remained in Pittsburgh to carry on alone.

IV

The Lifeboat Business

1854-1858

The years from late 1853 to 1858 may well be considered the most remarkable of William's career. After three fires and two partnership failures, he entered this period a bankrupt; and yet four years later, after undergoing two severe depressions, he emerged well-established in several new trades and approaching mature stature as a pioneer of the city's industry.

The collapse of Scaife, Atkinson & Okely in October of 1853 had left William "without means to do anything," as he put it; and the following months saw him casting about among acquaintances for capital. His fund-seeking letter to Representative Thomas M. Howe succinctly pictured his situation:

"I can rent the shops we lately occupied from the assignee . . . at a moderate rent, where everything is ready for operation. . . . To carry on such business will require, say, five to ten thousand dollars. . . .

"My own family consists of nine young children, besides as dependents my aged mother, (ill) brother, widowed sister, with four little orphan girls. I am down in the dust; will you reach forth your hand and aid to raise me up?"

Such pleas fell mainly on barren ground. "You speak of friends," he commented bitterly to Captain Atkinson, "I am glad you find them such, but wait as I have until you want money . . . and see if they don't scare off. . . ." In the end a few men, including a brother-in-law and father-in-law did stand by him, and generously offered financial help. He began all over again and was back on his feet in a remarkably short time, as a result of a deed of trust made in his behalf. In this document, which proved a charter of

independence for the Scaife business, his loyal Pittsburgh friends provided:

"Whereas, Wm. B. Scaife . . . has been unfortunate in trade, is left without means for the support of his family and under a load of debt, which he cannot reasonably expect ever to be able to pay . . . and whereas the subscribers, feeling influenced by motives of friendship . . . and confiding in his . . . integrity, industry and economy . . . we do agree to contribute . . . the sums severally annexed to our names . . . solely for the purpose of affording relief and support to the family.

"We agree . . . we will pay over to L. R. Livingston the several sums . . . taking his receipt for the same redeemable in all from five to six years and payment of legal interest semi-annually . . . provided he . . . employ the said Wm. B. Scaife . . . as agent to manufacture, trade, deal, barter, buy and sell in his name. . . . When such capital shall have been entirely redeemed . . . the proceeds and stock remaining shall accrue to the benefit of the family. . . . Withdrawal of capital and right of dissolution we reserve to ourselves if manifest lack of success shall attend a trial. . . .

Twentieth of December, 1853

Knapp & Wade	$1,000	Roswell R. Frisbee	$1,000
Thompson Bell	$ 500	Ephraim Frisbee	$1,500"

To his last days William cherished these men as his benefactors. He named a son for Lauriston R. Livingston, who underwrote the trust. Of Major Wade he wrote, "With the kindness of a father, he led me on through many years of varied fortunes." Thompson Bell he characterized as "my real friend"; and his affection for his in-laws, the Frisbees, never altered.

With the $4,000 trust to his credit, William recommenced business shortly after New Year's on a modest scale. He wrote Captain Atkinson, "Tis Saturday night and I have just paid off my hands with $36.00, isn't that a pile?" On February 14, he reported to the Captain: "Monday morning I had steam with one

Knaps Hotel — $1000 — One Thousand dollars

Thompson Bates & C — 500 — Five hundred

Russell & Erskine — $1000 — one Thousand dollars

Ephraim Frisbie — $1500 — one Thousand five Hundred Dollars

The Deed of Trust Which Saved William B. Scaife's Business

Blacksmith, two coppersmiths, one tinner, one sheet iron worker besides the Boat hands." In March, for the second time in his career, he re-purchased equipment lost in a partnership, paying $1,959, or nearly half his capital, for S., A. & O. tools.

This new era in Scaife history began not only with a reopening of the shop but also with a new product, the Francis Metallic Lifeboat. "Boat hands" mentioned above were already engaged on it. Less colorful than the majestic S., A. & O. steamers, this humble craft was destined to transport William toward happier times. He had secured the agency for the entire West and South, just after the march of progress readied the river trade for this still-novel product.

By mid-century steamboat catastrophes had become a national scandal. During 1851 one newspaper reported six hundred twenty-eight lives lost due to "the snags, explosions, collisions and drunken captains of the Ohio and Mississippi." Congress responded with safety legislation, effective January 1, 1853, for the first time requiring river vessels to carry a metal lifeboat, and life preservers for each passenger.

The invention of Joseph Francis, America's great pioneer of marine life-saving devices, ideally suited this use. A description of his craft, and William's start with it, may well be left to the rolling prose of the *Commercial*, January 23, 1854:

LOCAL MATTERS.

Francis' Metalic Life Boat.

The present age has frequently, and truly, been called utilitarian, but we do not deem that term one of reproach. On the contrary we agree with the idea of Jeremy Bentham, who, in substance, defines it to be, that which tends to promote the greatest happiness of the greatest number.

We were forcibly reminded of this, a few days ago, by a minute inspection of an invention of which we had often heard, "Francis' Metallic Life Boat,"

Surely the resources of talent and science, and Mr. Francis is a gentleman who possesses both, could be turned into no nobler channel than this; the result has been that his invention, in all essential details, appears to us to be perfect.

We will enumerate its merits in a few words. The boat is made of galvanized iron, which is not liable to corrode, and will endure exposure to the air, salt or fresh water, for years without change. Its sides are so "corrugated" that, though much lighter, it is infinitely stronger than a wooden boat; it has chambers for the reception of air, which are hermetically closed, and thus give it a buoyancy, which enables it, though filled with water, to support as many as can cling around it—common wooden boats, it is true, cost less, but they require constant repairs and are frequently unseaworthy. If exposed to the sun for a short time their seams open; if they receive a violent shock, they leak. Francis' life boats, are not liable to these objections. Though they may have been lying on the deck of a vessel or on the beach for years, they are as tight as when first made, and the most violent blow they can receive, only makes an indentation which can be remedied by using a hammer or even a stone.

One of the best, though not the only, nor by any means infallible, standards of merit, is success.—Judged by this criterion, Mr. Francis' is far in advance of all competitors. This invention has been adopted by the Government, and tested by the stern rule of experience, wherever the American flag has floated.

Our worthy fellow-citizen, Mr. Wm. B. Scaife, is agent for the sale of these boats, and we would advise our steamboat friends to call on him and examine the merits of this invention for themselves. Mr. Scaife will be found at the old stand of Scaife, Atkinson & Okely. We deem Mr. Francis peculiarly fortunate in having secured the services of a gentleman so thoroughly conversant with the subject, as Mr. Scaife.

On February 21, the River Trade column of the same paper reported on William's fabricating progress, with an interesting background note:

"Francis' Life Boats—In passing along Front Street . . . our attention was arrested by one of Francis' life boats of superior finish which our friend, Mr. Wm. B. Scaife, . . . was engaged in putting together. On entering his establishment, we found a number of these Life Boats of different sizes, which had already been completed. . . . When the first of these boats came to Pittsburgh, we recollect that Mr. Francis found it necessary to send out a mechanic to put it together and subsequently came out himself on a similar errand. It is gratifying evidence of the progressive ingenuity of our mechanics that they do not long depend on 'foreign' aid. . . . These boats are now not only well put together by Mr. Scaife but they receive a superior finish in passing through his hand which has not been attained in the East."

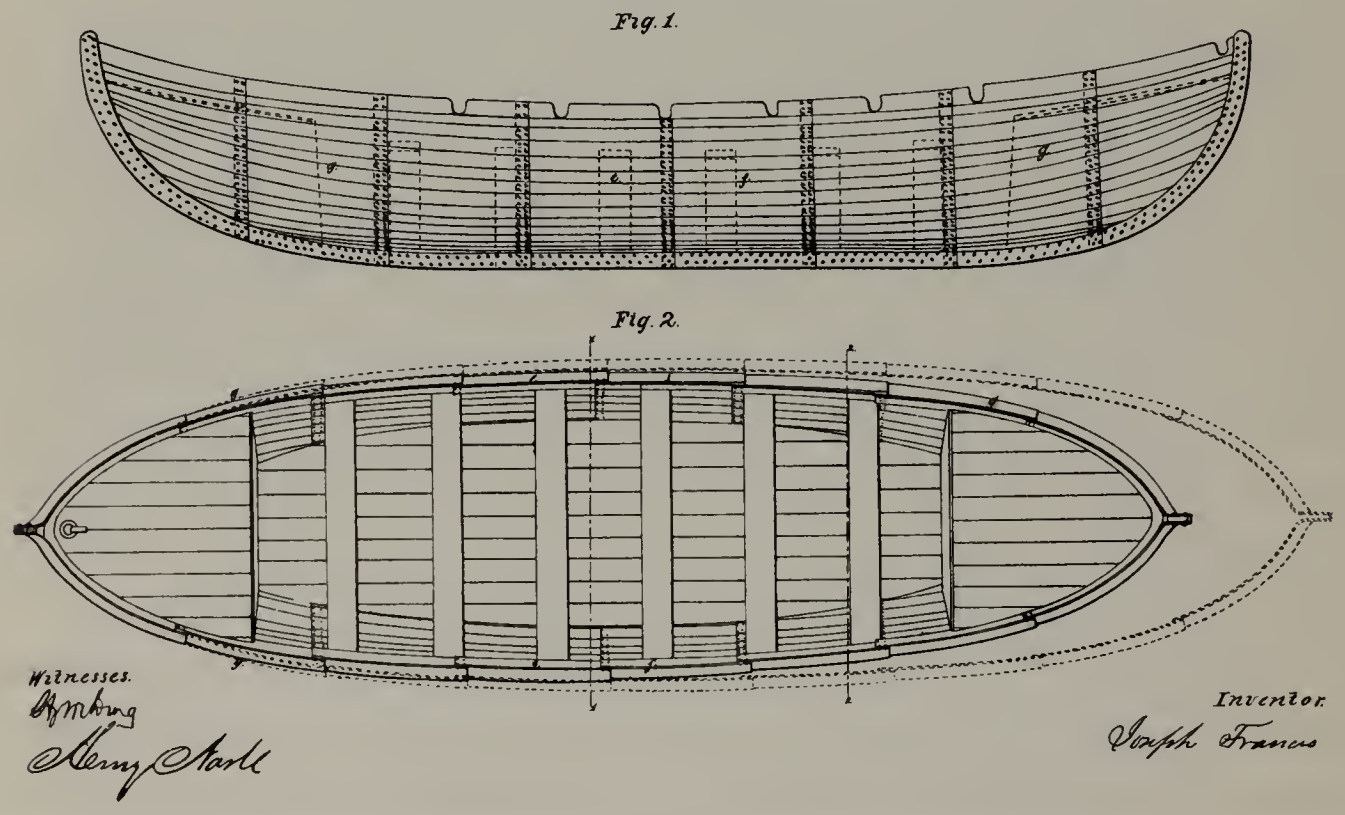
William's job was to assemble, rivet and otherwise finish the boats, using shapes galvanized and pressed to form in Francis' eastern factory. At the start he acted as his own foreman, paying a top $10.00 weekly wage to boat hands. Standard sizes made ranged from eleven foot, priced at $65.00, to twenty-two foot, at $175, with special orders filled up to twenty-six foot.

By the end of January he reported his work so well organized that, "I am now prepared to turn out about three times as many as will be required in this port." To handle the output, he contracted for sales agencies at Wheeling, Marietta, New Albany, Cincinnati and Louisville. Besides existing shipping, every new vessel on the river was a sure prospect; and, as seventy were building in Pittsburgh alone that year, business moved briskly.

As in all human affairs, however, there were several road blocks, the most galling being Francis' manufacturing manager, Marshall Lefferts. Destined to become a distinguished Civil War Colonel and later a telegraph developer, Lefferts took an established Easterner's "no nonsense" view toward the money problems of his small western agent. He overrode a liberal credit understanding made by Francis, forced William to furnish $1,000 bond signed by Knapp & Wade, and interminably demanded quicker payments.

William, however, could only pay as he was paid. "All I want,"

he reiterated, "is an opportunity to turn the sheets into money and hand it over to you." In a revealing commentary on river trade, he blamed slow returns on the lordly status of steamboat captains: "Here (the captains) are treated much as though it was a great compliment to get their work and give them as much credit as they want, without note or any particular time, but pay as they are able. . . . This is so and it is not in the power of anyone to change."



Sketch Showing Francis' Lifeboat from His Second U. S. Patent of 1858

To combat competitors, William turned to promotion, and, following up the *Commercial's* opening boost, he revealed unsuspected talents in that field. He carried a boat out every day onto the sidewalk as an advertisement, until he found himself subject to fine. He then wrote Francis, "If you had some defective sheets . . . I could make two half-lengths of which I could put up a half at each front over the door, then letter and finish them for signs." His most colorful proposal (whether carried out records do not show) was suggested to Francis on June 26: "As the weather is warm, I think of taking some of our boats to the river, pitch them off the hurricane roof, and have them turned over, upset,

rowed, etc., etc., before as large a crowd as I can muster. . . ."

He publicized a dramatic experience of brother-in-law Roswell Frisbee, even sending reports of it to Congress; and of course informing Francis: "My brother-in-law, Captain Frisbee, was wrecked on the *Yankee Blade* (off the coast of California). He says they had three wooden boats & two of your lifeboats. The wooden boats had holes knocked in them the first trip to shore, so that those who were in them were drowned . . . while *your lifeboats* continued to run backward & forward for thirty-six hours. . . ."

He enhanced his boats by including "very neat strong cast iron oar locks without extra charge." He fitted irons to bow and stern, and footlings along each side, to protect against denting. His larger craft were equipped with rings for lashing. Constant improvements, plus general excellence of workmanship, led to his winning the lifeboat medal at the County Fairs of both 1854 and 1856. Under pressure of such tactics, his competition "died out," as William put it.

Meanwhile the river safety regulations had provided additional opportunity to the Scaife shop in the form of the life preserver business. Shortly after the law's passage, S., A. & O. had secured a St. Louis firm's life preserver agency; and then, in the autumn of 1854, William designed and began to make his own.

Although he failed to secure a patent, in both practicality and marketability the Scaife preserver proved a minor masterpiece of his inventive skill. It was a jacket with neck loops, having the particular distinction of being filled with cork shavings where formerly only blocked or granulated cork had been used. The shavings better adapted this preserver than any competitive product, William liked to point out, for use as a pillow or for storing under a pillow. The simplicity of manufacture allowed a low price of $7.50 per dozen, which led to the product's wide adoption from Pittsburgh to the mouth of the Mississippi.

Getting the preservers sewn, however, was something new to William's shop experience, so he turned for aid to the family's feminine contingent. His sister, Anna, stitched the first; then an-

other sister, Lydia Fairman, soon became the production mainstay, creating undoubtedly the most frustrating labor problem in the company's history.

Lydia's husband, William, had died in 1850, leaving her with four small children whose support became largely William's responsibility; thus the life preserver business seemed heaven-sent to help out in a time of financial stress. Soon Lydia's entire family, who lived at Fallston, near Beaver Falls, Pennsylvania, were working on preserver covers at piece rates; and sending the sewn articles to be stuffed at the Scaife shop in Pittsburgh.

Lydia, however, seemed just not cut out for preserver cutting and stitching. She began by forgetting the original pattern for which she had made a trip to the city. She could never master the technique of shipping the preservers in large lots to save freight costs. Worse, she could not hold to shipping dates, so that William's hands were constantly meeting trains and boats only to find the sewn material not aboard.

Finally, the deficiencies of her workmanship, and her wastage of material, required a near martyr-like patience of her brother. On January 1, 1855, William admonished her gently, "The life preservers came to hand. . . . They are generally well, but do not think I want to find fault when I tell you a few points to alter. . . . The spaces are not all equal. Some burst open when being filled, so they should be through-sewed. By a little care these things can all be remedied, then you will find them just as easily done right as wrong."

In the end, William recognized no cajoling could alter the peculiarities of Lydia's production line, and quietly repaired her work in Pittsburgh. The business continued with fair success into the Civil War years. Thus, in 1855, William was established in the new businesses of lifeboats and life preservers besides his former trades. He had dropped only the contracting for complete steamboats. An advertisement ordered that year for *Lloyd's Steamboat Directory* summarized his river work:

WM. B. SCAIFE,

FIRST AND SECOND STREETS,

BETWEEN WOOD AND MARKET,

PITTSBURGH, PA.

MANUFACTURES

Copper Pipes,	Deck Stoves,
Sheet Iron Work,	Blacksmith Work,
Cooking Stoves for Steam Boats, and Hotels,	Chain Cables,
	Hog Chains,
Portable Forges,	Torch Baskets,
	&c., &c., &c.

LARGE BOLTS FOR BRIDGES, &C.

STEAMBOATS PARTICULARLY ATTENDED TO.

ALSO,

FRANCES' PATENT METALIC

Life Boats and Iron Yawls,

OF SUPERIOR MODEL AND FINISH.

These world-renowned Boats are made of Galvanized Iron, the nails and fastenings galvanized, which prevents rust. They are corrugated or creased, which gives great lightness with strength, and avoids the necessity of timbers. They are formed out of whole sheets, thus requiring but few seams; theseams are double riveted, which prevents the rivets from tearing out in case of dingeing, and ensures tightness. These Boats are always ready for use, whether wet or dry; no caulking to fall out if dry, no rust if wet. They are found, from their lightness and durability, to be the very best Boats for Yawls, Sounding Boats, Ferry Boats, or for Farmers on the river, or fast sail Boats.

To Sportsmen they are invaluable, as the small sizes can be carried by two men, or hauled on a wagon, cart or rail car, and thus visit lake, creek, pond or river.

SIZES—11, 12, 16, 18, 20 and 22 Feet Long.

Cork Life Preservers. Hair Felt, ¼, ½, ¾, and 1 inch thick, an excellent non-Conductor of Heat, for covering Steam Boilers and Pipes; also, to cover Water Pipes to prevent freezing.

Besides the above, William dealt in such a variety of non-marine products that only a few can be noted here. Included were Polley's patent bucket for chain water pumps, for which he held the western Pennsylvania agency; tubular bedsteads primarily for institutions, milk cans which he ordered by the gross, and self-sealing fruit cans. He had expanded his heating business, handling the Globe furnace (for which he won another County Fair award) and the Lotze furnace; and installing heating systems in such institutions as the Pittsburgh Female College, of which he was an incorporator. He began ordering registers and ventilators from Tuttle & Bailey, New York, long to continue as his suppliers.

By the next year William was well enough off to resume his cherished temperance crusade. Always a teetotaler, he gladly sacrificed trade for The Cause in the following letter. His sentiments must have startled, if not raised the temperature of, the recipient, who had innocently tried to order some distillery pipe:

"R. C. Byers
Fayette City, Pa.

"Sir: I am prepared to make all kind of copper pipes, etc. We do not (knowingly) make anything for a distillery as I do not want to aid in the most remote way in the injury of my fellow creatures. I concluded a long time since that it was wrong to drink spirituous liquors, thus, if wrong to drink it, it was wrong to make, or market, or sell the articles for making it. Allow me to hope that you will come to the same conclusion."

William's achievement in rebuilding a business from the ground up in this period is the more remarkable since he began in Pittsburgh's year of special calamities, 1854. Cholera ravaged the town so severely that newspapers suppressed the number of deaths, which probably reached 1,000. Sister Anna hovered near death's door from the effects of the disease. Crops of the district failed. Unprecedented low water made the river unnavigable for six months, so that William wrote in December, "The long continued low water and scarcity of money have caused the almost entire suspension of business here and the failure of many good men."

On January 27, 1855, he informed Lydia, "Such times I have *never* seen, the richest are breaking up and many are suffering from hunger. There has been a soup house opened here where soup is given to those who send for it. Yesterday the crowd was so great the police were sent for—not near all were supplied."

In face of these formidable difficulties, William was adding to his staff. In the winter of 1854-55 his total weekly pay roll varied from $140 to $165. A letter of this period mentions "my foreman, F. Moeckel." This is the first reference to a notable family of Scaife employees who served for more than three-quarters of a century as leaders of the company's mechanical forces. Moeckel apparently had just risen to his new position, having started work in William's shop on January 15, 1837.

Another milestone in company history was reached with the start of son Oliver in the trade. He first began helping out during the crisis months of 1854, and by the following year seems to have been regularly employed. Numerous letters calling back old workmen and seeking new hands appear in files of this time. One asked William Bayless, not heard from since he left for the gold fields two years before, to return. Another offered George Freize, then on a drunk in St. Louis, his old job back, urging that, if Freize could be sober and attentive, "I hope you will live and die with me."

The rush of so many activities would seem enough to fill most men's minds; but not so with William, who had determined to overlook no opportunities. The new trade of corrugated iron roofing began to appeal to him, no doubt through contact with Marshall Lefferts, then the largest contractor in that comparatively infant field. His try, with Lefferts' help, for the roofing contract of the new Pennsylvania Railroad depot in Pittsburgh failed by only the narrowest margin.

Far from discouraged, he exhibited a sample of his roofing at the County Fair of 1855, winning another medal for it.

This business did not develop as rapidly as his others, because, he wrote, "Our people here, renowned for their cautiousness, are

Several County Fair Medals Awarded to William B. Scaife

slow in adopting the roofs." Nevertheless, he plunged into its promotion with the same vigor he applied to lifeboats. He tried to persuade a leading architect to use the roof on his new house, knowing his example would be influential. He roofed at near-cost the foundry of A. Bradley, who had become the S., A. & O. assignee, as a sample of his workmanship. He wrote East, where iron roofing was more generally in vogue, for endorsements as to its durability.

Meanwhile, he faced, along with his fellow industrialists, another business collapse of national proportions. This was the panic of 1857, sown by years of reckless banking and credit practices. William began to feel the blighting breath of the storm in late 1856. On December 4, he wrote Lydia, "It is now after 10 o'clock at night. Oliver and I are doing the work of four or five hands to save all we can. We eat dinner and supper at the shop, and stay till 10 or 12 o'clock."

By the following September most Pittsburgh banks had suspended. Newspapers throughout the nation began to carry weekly lists of business failures. On October 23, William informed Lydia, evidently in need of work, "You do not appear to know that money has not been so scarce for twenty years—for three weeks I have been discharging hands—there are no new contracts for boats, consequently there will be no work wanted. I expect to be almost idle this winter. Most of the mills have stopped and several thousand persons turned idle."

Later correspondence reflects the increasing severity of the panic. The final straw came in a prolonged river-freeze shutting off much of such business as still dribbled into Pittsburgh, and leading William to comment, "We can get an answer from London sooner than . . . from the upper river towns when the river is closed."

In spite of all, including the nerve-wracking strain of meeting his remaining pay rolls, William "got through clear," as he noted in one of his letters. The only recorded casualties were several old lines, japanned ware and brass kettles, which he dropped.

With the resumption of specie payments by the banks in early 1858, the long-drawn-out lean years, marked by recurrent hand-to-mouth struggle, ended for William. At last he entered on a time of generally advancing prosperity.

The roofing effort began to pay. He consummated an arrangement with Moorhead & Company, of Pittsburgh, manufacturers of a superior corrugated iron, for reciprocal trade. Among terms, he was to extend the use of their product, and to receive a credit of $2,000 toward tools and fixtures for making roofing cornices.

The Moorhead firm began to steer trade to him. He secured the roofing for the Girard Hotel on Smithfield Street, the North American Coal & Oil Company works, a dwelling house in Washington, Pennsylvania, a stable in Pittsburgh. Foreman Frantz Moeckel was paid $2.00 per day and others $1.50 on such jobs. Finally came a prize contract, the forged iron roofing work for the U. S. Marine Hospital at Galena, Illinois. True, a conflict in drawings led the general contractor to charge the Scaife roof did not fit, and otherwise harass him; but the misunderstandings were resolved. William could point to the job as establishing him as a large-scale contractor in a growing field.

His pioneering spirit flourished. For one customer he developed a bottling machine. He schemed to introduce locomotive headlights for steamboats running at night, placing one on the ship *J. H. Judson*. On June 26, 1858, he described a revolutionary idea in a letter to the *Commercial Journal:*

"Say run two wire cables from the mouth of Ferry Street to the top of Coal Hill, suspend cars from each, work them back and forth with stationary engines, this will be perfectly *secure*, will relieve from traveling a long route up hill, will be accessible at all seasons; to the working man this will be a cheap residence of easy access. . . . Property holders would find purchasers . . . thousands would go there as soon as they would feel assured there was no danger. As the greatest of suspension bridge builders, Mr. John A. Roebling (future builder of the Brooklyn Bridge) is here now, his views on the plan could be readily obtained. . . ."

William lived to see his proposal for an incline adopted when the Monongahela Inclined Plane Company was chartered eight years later to operate on Mt. Washington. It is noteworthy that the Scaife Foundry & Machine Company, of which his son, Lucien, became chairman, built inclined plane engines, including one on The Liberty Avenue incline.

The mid-year of 1858 found William's personal, as well as business, life developing happily. It is no wonder his letters of the period show growing absorption in religious work, for he was president of the board of trustees, superintendent of the Sabbath school and leader of his church.

While two children had died, the quaintly-named Edmonia Virginia in 1849 and Willie in 1852, William had five beloved daughters, Emma, then making her living as an artist, Cornelia, May, Alice and Lois; and five sons. The three youngest sons were Lauriston, "the kindest of our family"; Lucien, "a quiet mule"; Marvin, "liveliest but spoiled."

William's fondest hopes centered about his first-born. "Oliver," he wrote friend Charles Cooke, "is much larger than I am, is with me, very attentive, industrious & capable. He does more than any man I ever had." Among other good qualities Oliver was imaginative and resourceful; and he was later to be widely credited with designing and constructing the first iron frame building erected west of the Allegheny Mountains.

For only one of his children did William hold serious misgivings. Charles he had previously described as "like a wild colt." Now he confided to Cooke, "Your namesake has determined to be a portrait painter. . . . While he has many good traits, he has others which throw them in deep shadow. *Please pray for him.*"

A surviving note from Charles's school principal adds an amusing sidelight:

"School Room, December 3, 1857

W. B. Scaife, Esq.

Dear Sir:

I regret to say that Charles was guilty of an act of impertinence

this morning, for which I severely reproved him, and sent him down stairs. He did not return, perhaps supposing I had sent him home. . . . The circumstances, in brief, are these. I was on the stairs as the scholars were coming in. Mr. Leach was also standing at one of the landings. I had noticed some of the boys in passing him saluted him in a rather disrespectful manner; Charles in passing made use of the expression "how are you, *Pap Leach?*"

Please deal with him as you shall judge best.

In haste,
Yours truly,
D. C. Holmes."

Apparently prayers or some other influence such as a wife of exceptionally splendid character were responsible for Charles's development into an industrious, abstemious and kindly family man. He became one of the city's most distinguished citizens and was president of the company at the time of his death in 1915.

V

Oil Boom and Civil War Period

1857-1867

As THE Scaife shop began to prosper in the latter 1850's, its owner was taking part in the birth of the oil industry. In fact, he became a refinery supplier and oil marketer nearly two years before the sinking of the world's first petroleum well at Titusville, Pennsylvania, in August, 1859.

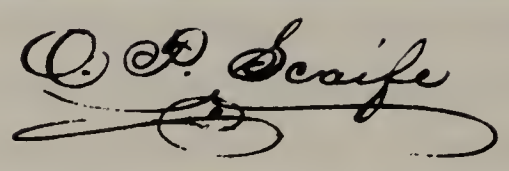
William entered the field through the almost forgotten coal oil business, whose pioneers developed the refineries and markets instrumental in the almost over-night utilization of the petroleum discovery. He began by building roofs for still houses, his corrugated iron giving the needed fireproofing. In the summer of 1857 he secured his first contract in general refinery outfitting, for the East Palestine Oil Company in Ohio; and, soon after, he re-erected a small burned-out works for Charles F. Thumm, near Rochester, Pennsylvania.

By the next year he was supplying "apparatus, implements, machinery and fixtures used in making coal oil," to North American Coal & Oil Company, Kiskiminetas, and Luesco Coal & Oil Company, near Freeport, two of western Pennsylvania's first notable refineries. He wrote one prospective customer, "I have built a large amount of (coal oil) apparatus, stills, tanks, pipes, fireproof iron roofs and frames, and thus obtained a knowledge of the construction of such works."

These activities were stimulated by a growing oil shortage. Relentless exploitation had practically swept the sperm whale from the seas. Sperm oil for the lamps of America sold at a prohibitive $2.50 a gallon; and a price of $5.00 was predicted. Camphene, a popular substitute mixed of kerosene and turpentine,

proved dangerously explosive. Meanwhile, the growth of mechanical industries, particularly the railroads, raised a hectic cry for a plentiful, cheap lubricant.

To both these problems coal oil offered the first practical answer, seemingly forecasting a vast new industry. In his anxiety to grasp this opportunity, William did not remain content as one of Pittsburgh's original oil supply manufacturers. He seized on two calamities, of a type familiar to early refiners, to become a



producer as well. The fire at the Thumm works enabled him to rebuild on terms which made him the exclusive sales agent for the refinery and set up Oliver as a partner in the firm. Palestine Oil Company failed, and he agreed to operate the plant, under his own superintendent, Samuel A. Hill, to recover his debt.

On April 15, 1858, William wrote, "We have commenced manufacture of coal oils lately, and can furnish an article fully equal if not superior to kerosene oils." This statement was soon to be demonstrated as questionable. The only partly understood process

of refining yielded an oil of uncertain quality, sometimes rendered scarcely usable by nauseating odor, smoky burning, explosiveness, unacceptable color. What to do with by-products, such as benzole and paraffine wax, at first stumped the refiners.

How William experimented with new uses and markets for the products and how Oliver gradually overcame the early production problems make a fascinating footnote to oil history, but can only be summarized here. The work was carried on for approximately five years with considerable success. Production at C. Thumm & Company, later renamed Economy Oil Company, began with a trickle of six barrels per week. At the end of the period it had reached two hundred twenty-five barrels. The company eventually turned out oils "graded for different kinds of machines from thin as fine sperm oil to thick wagon or roll grease."

As the decade closed in a virtual coal oil boom, William was establishing sales outlets as far down the rivers as New Orleans. Although price fluctuated sharply, the product usually sold between 50c and $1.00 a gallon, and at times demand ran so high that supply had to be pro-rated among customers.

Even as these prospects glowed brightest, the pump set going in late summer of 1859 by the pioneer oil driller, Colonel E. L. Drake, was sounding the death knell of the coal oil industry. Like other refiners, the Scaifes rapidly adapted their works to petroleum. Then East Palestine, never a satisfactory project, bogged down hopelessly in creditor suits. In 1863 fire again wiped out Economy Oil. Instead of rebuilding, the Scaifes sold the remaining assets to the Economites, who practiced a form of Christian communism at the unique village of Economy, Pennsylvania (now a state park at Ambridge, Pennsylvania); and quit oil refining and marketing once and for all.

Interest in refinery management had been replaced by a more profitable outlet for the firm's basic metal fabricating trade—the phenomenal growth of petroleum drilling. By the early months of 1860 "oil fever" in western Pennsylvania reached a pitch that made the not-long-past gold rush fade to insignificance. Whereas

Drake's strike and its immediate successor wells required pumping, 1860 brought in the astounding flowing wells. Oil field adventurers watched with near frenzy as gas-drive wells pitched drills and pipe from the holes in fountains of black gold. Men who had passed lives in penury found themselves wealthy overnight.

The news plunged the north-of-Pittsburgh country into the maddest business excitement of its history. "All the country is wild about it," William wrote of the oil region. "For many miles about in every direction the land is laid out in oil-claim lots. Enough wells are being bored to pump Lake Erie dry."

Oil flooded the ground adjacent to the wells, creating severe hazards of fire and loss, and posing the industry's first great problem—where to put it? Now William's pioneering coal oil work began to pay its most valuable dividends, both for him and for the new petroleum trade.

Among his early work for Luesco Coal & Oil Company, he had built eight iron tanks. Date of the contract, November 19, 1858, stands as a milestone of oil progress, for these were the first iron tanks erected to hold oil. This fact, substantiated by the foreman on the job, Frantz Moeckel, and by his son, Gustavus, has never been challenged.

The structures had stood more than a year at the onset of the petroleum boom of 1860, yet news of this revolutionary use for iron only slowly penetrated the oil region. Early drillers depended on large wooden vats, caulked with oakum. Besides their questionable safety, the limited capacity of the containers forced the dumping of most early production on the market. As need for storage grew, William became the first to introduce the iron tank to the fields. Working through his refining and marketing contacts, he was soon dispatching construction crews into northwestern Pennsylvania. Scaife tanks rose at Oil City, Tidioute, and other sites fabled in petroleum lore.

While comparatively few in number by modern thinking, it is hard to minimize the significance of Scaife-built tanks to the industry. Almost at the start, they demonstrated a solution to bulk

storage which has never been bettered. Large operators were enabled to hold back their output at times of oversupply, exerting a sorely needed stabilization on the infant oil production.

At first iron tanks could, of course, be justified only at the major wells and refineries, but they became an important phase of Scaife structural activities as the oil decade progressed. A

W. B. SCAIFE.

Metallic Vessels.

No. 6,391. Reissued April 20, 1875.

Fig. 1.

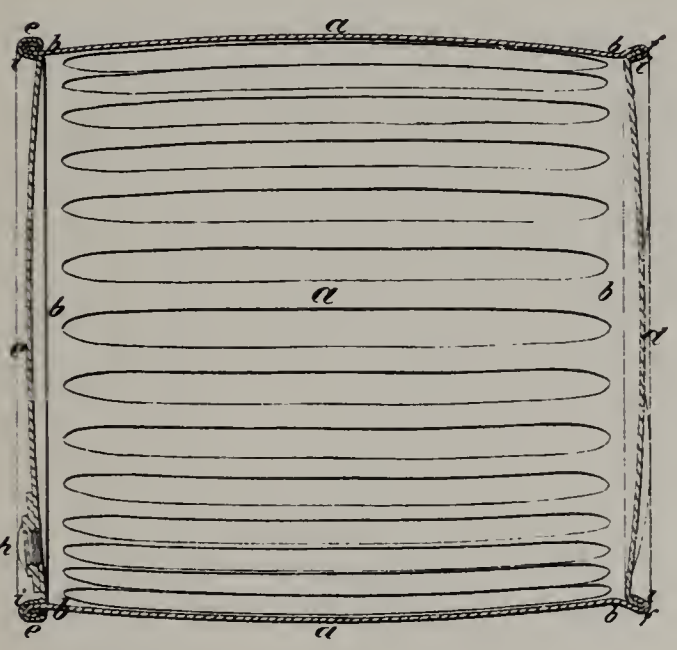
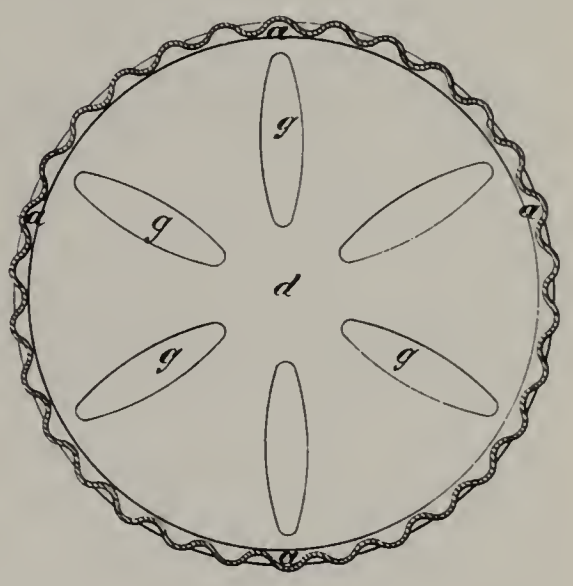


Fig. 2.



Witnesses.
John Becker.
Fred. Haynes

Wm. B. Scaife
by his Attorneys
Brown & Allen

The Scaife Iron Cask for Oil, First Patented in 1860

single tank, in fact, proved a sizeable undertaking for the small shop. William's successful bid to Brewer Sill & Company, refiners at Pittsburgh, on March 22, 1862, describes one of the nation's early iron oil containers:

"A tank 40 foot diameter by 14 foot deep including roof and everything completed for $3,325. Capacity of this tank is 3,300 barrels. The bottom and ½ the sides would be ¼ inch iron and the balance 3/16 inch iron, the whole sufficiently strengthened with

angle iron and good stout roof frame covered with 14 iron." On this job Oliver received $50.00 for drawings and superintendence; Frantz Moeckel $2.50 a day as superintendent; and William Boetcher, who became another mainstay of the Scaife mechanical force, $2.00. A crew of seventeen put in a total of five hundred ninety-three and a half work days on the project.

Another oil industry problem to which William addressed him-

WM. B. SCAIFE,

First & Second Streets, between Wood & Market, Pittsburgh,

MANUFACTURER OF

GALVANIZED IRON, COPPER & SHEET IRON WORK

OF EVERY DESCRIPTION. ALSO,

BLACKSMITH WORK FOR STEAMBOATS, BRIDGES, &C.

SHEET IRON TANKS FOR OIL, WATER, &C.

CONDENSING PIPES AND WORMS.

And everything in the above lines for Oil Works.

Corrugated, Galvanized and Black Iron Roofing, with

BAR IRON FRAME WORK,

Admirably adapted wherever a perfectly Fire-Proof Building is wanted. Public and private buildings heated by several of the most approved Furnaces. Also, Registers and Ventilators constantly on hand.

Cornices and Lintels of Galvanized Iron.

Scaife Advertisement in 1861-2 City Directory

self was the development of a better medium for oil transport than the universally used wooden cask, subject to leakage or breakage in rough handling. His answer was the iron barrel. It represented the first large, portable metal oil container, the direct ancestor of today's familiar oil drum.

This cask combined "the properties that make a light barrel strong and so shaped as to be suitable for transportation." Horizontal corrugations, diminishing toward the ends, gave it a bilge

facilitating rolling. Lap joints at the ends extended in chimes to provide hand-holds. This invention, on which he began work at the very start of his coal oil activity in 1857, became his first patented product on April 24, 1860.

It is an irony of oil history that fate blocked the use of this development at the very moment when producers were crying for even more of the unsatisfactory wooden barrels than could be manufactured. Hardly had William begun production, than holders of an earlier similar patent for a metal gunpowder cask notified him to desist on grounds of infringement. Despite years of negotiations, abortive hopes and false starts, he never succeeded in invalidating the gunpowder cask patent nor in coming to terms with its owners.

Finally, in 1874, he sold certain distinctive features to William G. Warden of Philadelphia, probably for $500 (the price at which it was offered to another prospective purchaser). The barrel, however, exerted a significant influence on his future, for it incorporated the double-seamed head attachment, later adapted to the most successful of all Scaife inventions, the Kitchen Range Boiler.

The leading profits from all Scaife oil industry ventures were made by the sale of oil well supplies. As the frenzy for drilling mounted, William wrote, on October 16, 1860, "Large amounts of both copper and gas tubing are now being used in oil wells." In November he reported, "I am making quantities of tubing for oil and salt wells." Another letter revealed, "We have not half enough hands."

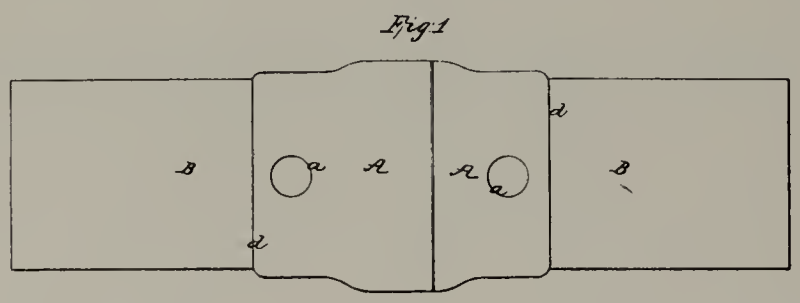
Tubing purchased in large lots was fitted with couplings in the Scaife shop; and, characteristically, William turned to improving this product. The need arose from a baffling problem of the early producer, the tendency of tubing to twist or break off, losing itself in the hole. The twist-off commonly came at the couplings, where screw threads had weakened the tube. As a solution, William devised couplings which were brazed to the tubing and which carried all the screw threads, leaving the tube proper threadless and uncut.

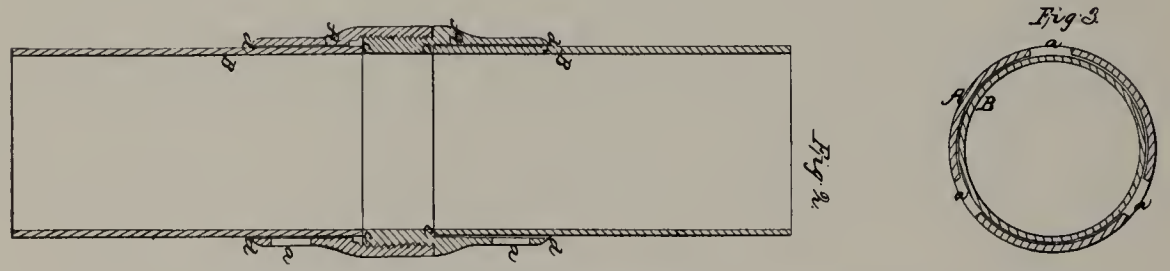
He had begun work on this development in the late fifties, gradually perfecting it, and finally adding the distinctive touch of sinking holes in the couplings for better distribution of the brazing solder. The resulting joint he claimed was stronger than any other part of the pipe. After making this product for years, William patented its final form. This was his second patent and was issued on February 14, 1865. His letters through the sixties

W. B. Scaife.

Pipe Coupling.

No. 46,395. Patented Feb. 14, 1865.





Scaife Oil Tube Coupling from U. S. Patent

are extensively devoted to its advantages; and it received considerable publicity.

In the same period William added sucker rods, stuffing boxes, gas tongs, engines, walking beams and much other oil drilling apparatus to his line, marketing large quantities of each of these products. He sent Oliver into the fields to push sales when not too involved in refinery management or construction. With the Scaife shop "in on the ground floor" of oil operations, the year 1861 dawned at once bright with commercial promise and darkened by clouds of civil conflict looming over the nation. Soon even

those caught in the "oil fever" could no longer ignore the approaching tragedy.

William's first mention of the Secession movement came in correspondence refusing credit to oil buyers in the South. Then on January 18, 1861, he opened his heart to an old acquaintance in New Orleans. The letter summarizes a largely neglected business view of the rebellion:

". . . What earthly good could any portion of the Country get by secession? Are not we tied together by a common brotherhood, ties of iron tracks, commerce, etc., and is there no redress for wrongs in the Union, and in times of suffering would not Pittsburgh (Abolition as they call her) be ready to extend a helping hand? It almost makes me shudder when I think of the calamities that Civil War would bring on the whole nation. Charleston has driven all her commerce away and already with not six weeks of secession are her people beginning to feel the burdens of taxation and a loss of business and credit. Here we have peace and no arming of volunteers, bread in plenty and trade as good as usual. . . ."

But a time of arming volunteers was close at hand. Fort Sumter, long besieged in Charleston harbor, fell on April 14. Lincoln issued his first call for troops. Allegheny County responded with a rush that eventually placed 30,000 names on her roll of honor. Local industry turned to producing a volume of arms that was to make the city an arsenal of the Union. William's next letter on the subject, no longer pacific, called on Representative Robert McKnight to secure Federal warship contracts for Pittsburgh, an appeal later answered when four ironclads were built in local yards, including two monitors erected by Snowden & Mason near the Point.

In June, 1861, William made his first, but unsuccessful, war bid for 3,750 mess pans. Then Allegheny Arsenal began giving him repeated orders for his father's old line of tar and sponge buckets, and also for canister plates. He made and set up at Camp Howe, in Oakland, twenty-five cooking stoves to serve one hundred men each. But, although "the cooks were well pleased," the

Army balked at a verbally agreed-on price of $67.00 each; and William underwent his first unpleasant experience of being "re-negotiated" by an arbitration committee.

As the slaughter mounted along the not-so-distant battle lines, contracts poured in. Soon he was heavily engaged in turning out tops and bottoms for canisters (cases for holding shot fitted to the guns) varying in size up to twelve inch diameter. The shop turned out 22,000 of these plates during the Civil War.

Sixteen hundred and ninety shell straps up to eleven inch size were supplied to Knapp & Rudd, one of the city's major ordnance

Charles C. Scaife as a Young Man

works. He filled orders for 5,000 cantle plates, the upwardly projecting rear plate for military saddles (which Pittsburgh produced in quantity); but amid the rush of other war, oil field and construction contracts, he declined to make 5,000 saddle arches.

Charles, the second son, entered the shop just in time to help shoulder this burden. It must have been a relief in more ways than one, for in boyhood Charles had caused his father some misgivings and his rebelliousness extended into his teens. The youngster entered old Central High School with one of the earliest classes, that of July, 1858; but the "people's college," as this in-

stitution was not without reason nicknamed, seems to have lacked appeal. On September 13, 1860, his father wrote a friend in Rochester, Pennsylvania:

"On last Friday my son Charles, a boy of sixteen . . . left home in company with another boy of his age intending to go to New Orleans. I learned that they tried to get on the Steamboat *Key West No. 2*, but Captain Evans very properly refused. . . .

"What I wish is, if my boy is anywhere about your country that he would be sent home by an officer, unless he would come willingly with some person who will deliver him to me. . . ."

Charles did come home; he was graduated from Central in three and one-half years, the curriculum not being yet complete; and took his place by his father's side on December 5, 1861. It was a time when the flood of orders from armed services joined with oil demands to engulf Pittsburgh in a double flood of prosperity. The mills and factories hummed; but, as the next year wore on, things did not go well for the Union armies. In the early fall of 1862, Lee thrust boldly over the Potomac, threatening Pennsylvania itself.

"Military movements on the borders of our own state," William wrote on September 12, 1862, "excite considerable feelings of danger here on a/c of this point being such a vast depot for certain supplies. . . . The rebels (by) two days of forced marches would divide our state. . . ." Then, on September 15, he informed friend Oliver Shiras at New Castle:

"We are much in the usual way only that Charles has gone to war with the last rush. I last heard of him at Greencastle. Caleb Lee's youngest son, Richard, will be brought home dead tomorrow. . . ." Charles had responded to the call of Governor A. G. Curtin for all able-bodied men to place themselves under arms, ready to march at an hour's notice in defense of the state. He enrolled in Company D, under Captain J. C. Mattern, Fifteenth Regiment, Pennsylvania Militia Volunteers.

The rapidly forming regiments went forward immediately toward the front. The Fifteenth pushed through Hagerstown, stand-

ing in the reserve as the armies of North and South locked in the war's bloodiest day of combat at Antietam. Only briefly, when an old man, did Charles refer to the incident in his diary, September 17, 1912:

"Fifty years ago today was Battle of Antietam—second largest battle of our Civil War. Our regiment did not get into action but expected to get in the second day, but the Rebels departed during the night." Had General McClellan used these reserves, instead of holding back a third of his vastly superior forces, he might have crushed Lee and changed history—and, incidentally, the Scaife story. As it was, the invaders were thrown back at frightful cost. Charles's regiment was discharged later in the fall when the emergency had passed.

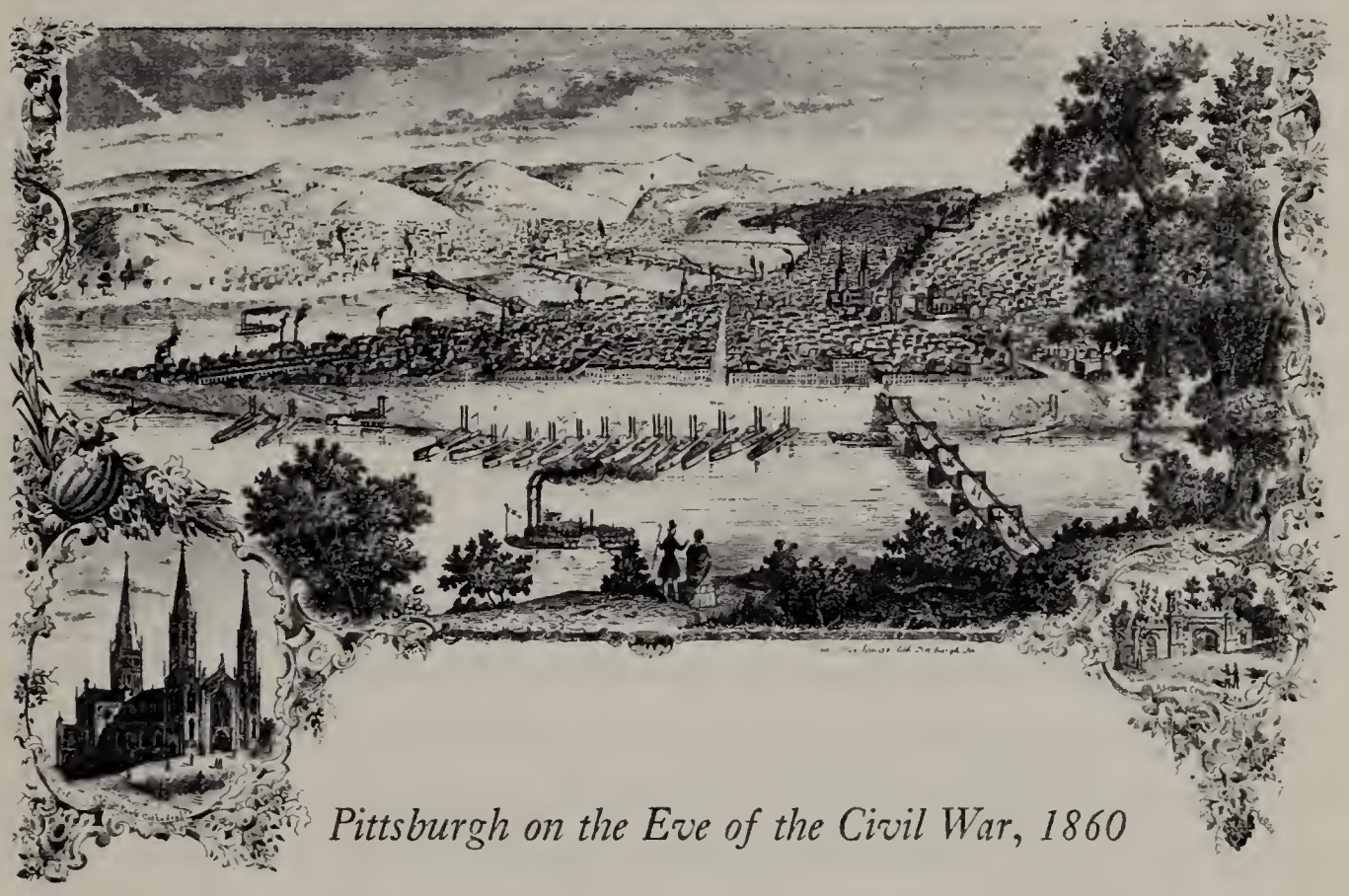
On the same day as Antietam, Pittsburgh suffered its terrible Arsenal explosion, which Gust Moeckel used to vividly recount over a half century later. Some kegs of powder were being brought from the station by dray to the Arsenal; one keg was leaking and powder was trailed on the street. Either a wagon tire struck a spark or in some other way this powder train was ignited as the gunpowder was being delivered. The explosion of powder on the dray blew up most of the other munitions in the Arsenal, caused much damage and killed seventy-four persons, many of them girl armament workers. Rumors circulated that it had been the work of Rebels, but this was never proved.

The year 1863 began with an inspiring event for William. His diary of January 2 notes, "President Lincoln's proclamation of Emancipation . . . received today with great enthusiasm. Lord bless the measure and the President!"

Then, as spring bloomed, a new pall of apprehension spread over the city. On May 2 William wrote, "We are threatened by Rebels by way of Morgan." May 3 brought the disastrous Union defeat at Chancellorsville. With June, wild rumors flew of a great foray impending on the state. The Confederate army had vanished into the Shenandoah Valley, its fateful movements masked by the raiding horsemen of General J. E. B. Stuart. William's diary

reflects a contemporary view of this glamorous Southern leader, "Rebels coming on us in 18,000 cavalry under 'Villain' Stuart, Rebel thief. O! Lord! Thou art our help and our shield."

The Rebel vanguard seized Chambersburg on the fifteenth. Governor Curtin again summoned all able-bodied males to enroll in military organizations. On the twenty-first, with the invasion making headway, William noted, "Oliver at artillery camp. Charles at infantry camp. . . . Bad news from our Armies. We are in the Lord's hands."



Pittsburgh on the Eve of the Civil War, 1860

Business had virtually suspended in Pittsburgh. The Committee of Public Safety called on all employers to assign their men to throwing up entrenchments on strategic heights. As many as 11,000 workers labored on fortifications stretching from Mt. Washington to Turtle Creek. In daily lists of firms engaged, the Pittsburgh *Dispatch* first reported Scaife hands at work on June 22 in the Herron Hill area, continuing on subsequent days, the largest number being thirty-three. On the twenty-seventh William noted, "twenty-five hands on fortifications in Winebiddle's Woods." Oliver left his drilling to aid in this defense work.

Scaife hands, their assignment completed, returned to the shop on the twenty-ninth, as newspapers reported forward divisions of Lee's army, 37,000 strong with one hundred four pieces of artillery, swarming through Chambersburg; York captured; the Columbia bridge in flames behind the Union retreat; Rebels near Harrisburg and Gettysburg.

For early July, William's diary is a complete blank; but the reader knows the story, the victories of Gettysburg and Vicksburg, the invasion hurled back, the high tide of the rebellion passed. "Good news," he resumed thankfully on the tenth, "still comes from the Armies of the Union, East, West and South."

Now, war and industrial work resumed at a driving pace, and along with the grind at the shop there occurred two personal events which affected William. While war labor shortages plagued all Pittsburgh industry, he was notified, on his fifty-first birthday, to meet with his workmen at 6 P. M. "As there is much trouble now with the hands on account of demand," he commented, "I thought of unreasonable demands or turn out (a strike)." What happened nearly overwhelmed him:

"As the hands quit work, they formed a semi-circle . . . and requested I step to the door, and George Garrison made a very flattering, neat speech, handing me a magnificent gold-headed cane, engraved, 'To Wm. B. Scaife from his workmen, Sept. 5, 1863.' Thanks to God I have not lived altogether in vain. . . ."

The following year dealt him one of the bitterest blows of his life. At the quarterly conference of the Penn Avenue Methodist Episcopal Church, William presented resolutions condemning the Asbury Chapel Society for holding lotteries to pay off its mortgage "in violation of Civil Statutes . . . and rules of the Church." To his shocked surprise he found the paper "unceremoniously" tabled, and himself made the butt of "false and slanderous" attacks.

These actions, he wrote on April 9, 1864, "placed the conference in the astounding position of a *religious* body *refusing to condemn sin*." Although he had been a member of the Society for twenty years and all his children had been baptized there, he

concluded, "After long and prayerful consideration . . . I would lose all self-respect if I continued longer . . . among you." He resigned his membership forthwith.

During the war the Scaifes continued to fabricate lifeboats, although press of other work sometimes caused the work to fall as much as two months behind. William's final boat exhibit came in connection with the city's Sanitary Fair of 1864 for relief of wounded and ill soldiers. To this exposition, perhaps the grandest to that time in the district, twenty-six Scaife workmen headed by Frantz Moeckel contributed an eighteen foot Francis' craft, "beautifully painted with gold stars, etc., the whole design representing our good old flag." The mechanics, William noted, "prided themselves on their workmanship."

The life preserver trade, however, proved too bothersome to handle, even though sister Anna frequently supplemented Lydia by sewing in the shop. On November 5, 1864, William reported he had turned the whole business over to Armstrong Cork Company.

Scaife roofing and structural activities meanwhile kept pace with the demand for greater production facilities. In 1863 William began filling a continuing series of contracts for the expanding sister firms of Jones & Laughlin and Laughlin & Company. The jobs included furnace work, roofs, plant bridges, platforms, iron stacks, cupolas; and quantities of blast furnace pipe, blast nozzles, steam pipe, water conductors, and the like. "We did all the work for their last (Eliza) furnace," he commented in 1865, referring to the Jones & Laughlin Steel Corporation's early works at the site still occupied by the company on Second Avenue, Pittsburgh.

He erected roofs for Spang Chalfant & Company, Lake Superior & Pittsburgh Iron Company, the Aladdin Oil works, and prepared the iron work for the Beaver jail. As early as 1863, young Charles worked at preparing structural drawings; and Oliver, wherever possible, superintended erection. Oliver, indeed, ranked high among midwest roofing authorities, having introduced the use of the iron frame roof west of the Alleghenies in his efforts to build fireproof refineries.

During 1863 William began negotiations with Pusey Jones & Company, Wilmington, Delaware, for a corrugating machine and shears of his own design so he could press his own sheets for both roofing and siding. Oliver went on to supervise the making of this equipment, which cost $1,100. William proudly wrote, "We now have the largest corrugating machine in the U. S." It soon paid dividends in worthwhile contracts, including one for three arched iron roofs for Belmont Furnace Company, Martinsburg, West Virginia, and a similar one for Belfont Iron Works, Ironton, Ohio.

The oil business, which let up briefly when supply outran initial demand, boomed anew in 1864. On November 30 William wrote, "People here seem to be going wild again on oil interests." Next year he set up a sales branch in Marietta, Ohio, under T. J. Orr, and an agency at Tidioute in which Oliver was a partner.

He sent both sons to stir up business in the oil regions, and wrote the Oil City *Register*, offering to pay for confidential information on "all persons now boring wells in your section." Ads were run in numerous oil area papers; and his representatives were encouraged to put up posters and give out advertising cards. The close of the Civil War in 1865 brought William his all-time peak of oil field orders. In his struggle to fill them, he half begrudged the mourning for the climactic tragedy of that conflict. "We have been stopped three days in the last week," he wrote on April 22, "on a/c of Lincoln's death which has thrown everything wrong for a while."

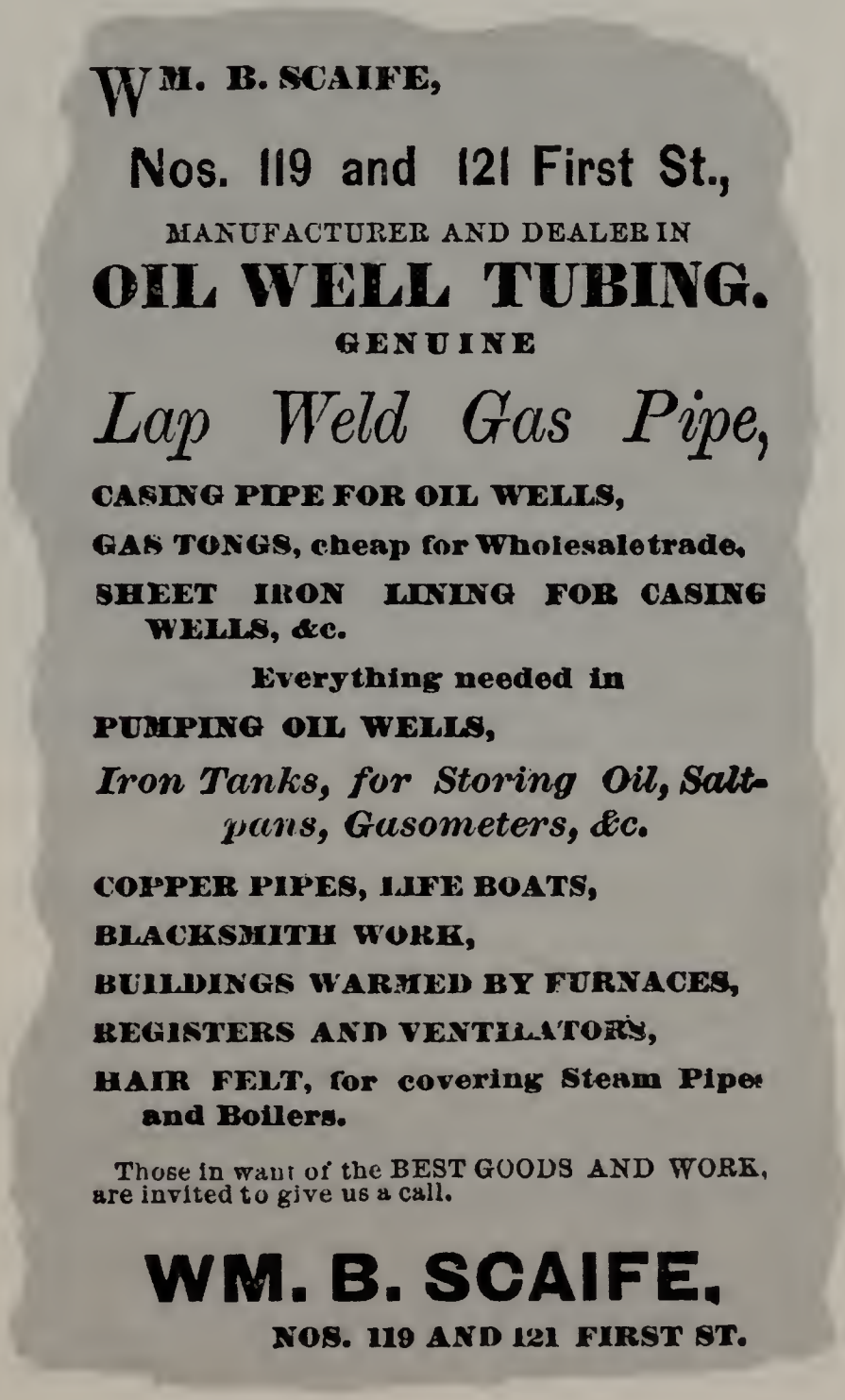
In the same year a new product, lap-welded pipe, was added. "This is an extra made pipe, smooth inside, needs no reaming out, never likely to burst . . . more durable," William announced. The shop also undertook production of oil well casing; and its stock book at mid-year showed $18,128 of goods, primarily oil field equipment, on hand.

Scaife tanks were still being erected in the years 1865-68. Two of the largest, of 12,690 barrels capacity and contracted at $9,209 each, were for Calhoun, Edwards and Wm. Thompson at Tidioute and for McClintock, Wm. Parker and Wm. Thompson at Oil

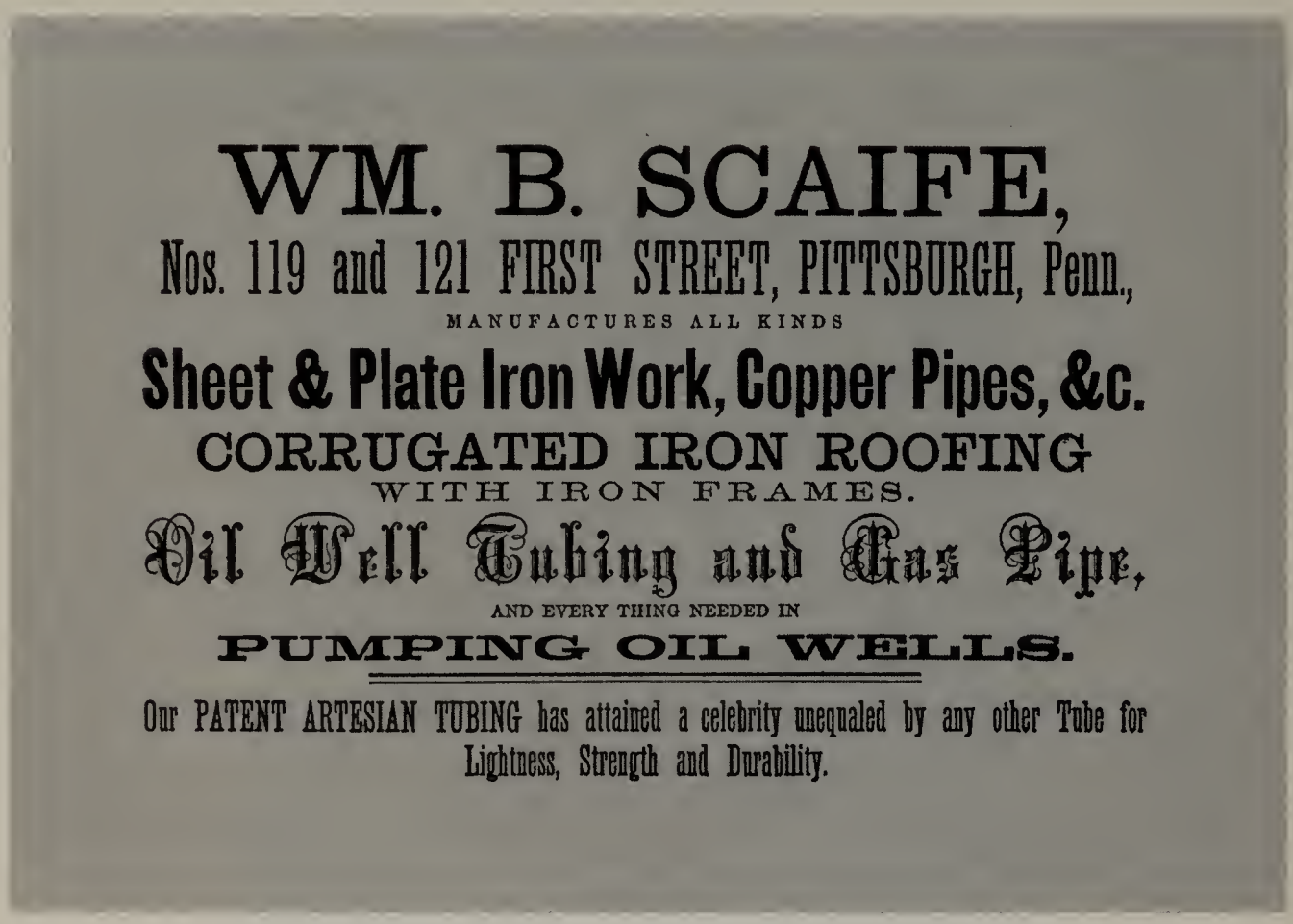
City. A 10,000 barrel container was built for James Bleakley at Franklin; another of 40 foot diameter by 20.3 feet deep for F. W. Mitchell, Rouseville, Pennsylvania.

The quality of Scaife tank workmanship is proudly remarked in Oliver's letter to a prospect, "We do not propose to make a tank bottle tight . . . but we have built them that the leakage would not be a barrel a month in a 12,000 barrel tank." Meanwhile tank pay rolls evidenced wartime inflation, with Frantz Moeckel down at $5.00 as foreman and helpers at $2.00 a day.

On April 18, 1867, the Scaife advertisement in the *Commercial* pictured the business as largely dominated by oil work:


WM. B. SCAIFE,
Nos. 119 and 121 First St.,
MANUFACTURER AND DEALER IN
OIL WELL TUBING.
GENUINE
Lap Weld Gas Pipe,
CASING PIPE FOR OIL WELLS,
GAS TONGS, cheap for Wholesaletrade,
SHEET IRON LINING FOR CASING WELLS, &c.
Everything needed in
PUMPING OIL WELLS,
Iron Tanks, for Storing Oil, Salt-pans, Gasometers, &c.
COPPER PIPES, LIFE BOATS,
BLACKSMITH WORK,
BUILDINGS WARMED BY FURNACES,
REGISTERS AND VENTILATORS,
HAIR FELT, for covering Steam Pipes and Boilers.
Those in want of the BEST GOODS AND WORK, are invited to give us a call.
WM. B. SCAIFE,
NOS. 119 AND 121 FIRST ST.

Even as this copy ran, however, the lush oil field spending was drying up at the source. After the war competitive price cutting became common, while in 1866 extensive opening of new fields, including many abroad, cut off exports and flooded the domestic market. Depression gripped the industry. William closed his out-of-town branches. In March, 1866, he wrote his tubing supplier in Philadelphia, "We have on hand about $8,000 of goods bought from you. Ordinarily we would have sold several times over."


WM. B. SCAIFE,
Nos. 119 and 121 FIRST STREET, PITTSBURGH, Penn.,
MANUFACTURES ALL KINDS
Sheet & Plate Iron Work, Copper Pipes, &c.
CORRUGATED IRON ROOFING
WITH IRON FRAMES.
Oil Well Tubing and Gas Pipe,
AND EVERY THING NEEDED IN
PUMPING OIL WELLS.
Our PATENT ARTESIAN TUBING has attained a celebrity unequaled by any other Tube for Lightness, Strength and Durability.

A Scaife Advertisement of the Post-Civil War Period

On May 24, he reported, "We have concluded to sell the tubing . . . on hand at cost and await developments."

Many small producers failed. In 1867, several months after the foregoing advertisement appeared, William told a prospective buyer, "We have lost more the last few months by bills of oil companies not being paid than all the profits from those that have paid. . . . We were forced as a matter of self-protection to ask all oil co. bills to be paid before shipping."

The sale of oil well supplies, as a major concern of the Scaife

shop henceforward dwindled, although not given up for some years. William's later oil activity centered in several patents of his coal oil associates, S. A. Hill and C. F. Thumm, for refining and burning petroleum. The Scaifes held a third interest in these; spent much time getting up foreign agencies, and even secured an English patent. The burner particularly interested William as a means to adapt oil heat to puddling iron and to power steam locomotives. His concepts, however, proved decades ahead of his time, owing, as he explained, to "the high price of oil and the very low price of coal here."

Meanwhile, some tinkering William had been doing in the shop further diverted his thoughts from oil. His hands were fashioning there, by the latter sixties, the device which would fix the modern character of the Scaife business.

VI

William's Final Years

1868-1876

A FURTHER shift of emphasis in products being featured as the main lines of the factory was noticeable in the latter 1860's. Corrugating sheet iron and the design and fabrication of roof frames became the most important activities of the business. Wm. B. Scaife was the first firm west of the Alleghenies to fabricate corrugated sheets, the importance of which increased rapidly.

A surge of westward emigration, greatly accelerated by the advance of the railroads, stimulated all industry. On May 10, 1869, the driving of the "golden spike" at Promontory Point, Utah, signalized the completion of the first transcontinental rail line. By then the big corrugating machine in the Scaife shop was working overtime to supply roofs for America's industrial expansion that followed the Civil War.

In the previous year, William had begun a series of jobs notable for the follow-up work they created. The roofing of Etna Iron Company, New Castle, led to three more jobs in that town. The first of four Sharpsville, Pennsylvania, contracts was performed, and the first of three in Youngstown, Ohio. During 1869, the Scaifes began the first of four contracts in the St. Louis, Missouri, area; and their crews were active throughout the Tri-State area.

In Pittsburgh, the Merchants and Manufacturers Bank and the new Dollar Savings Bank, still standing as a landmark on Fourth Avenue, were roofed. Numerous local plant buildings were covered with corrugated iron, including the Isabella Furnace Company, Etna, since absorbed by United States Steel and operated as its familiar Isabella furnace. Records of many other roofing contracts in the neighborhood are still preserved.

W. B. SCAIFE.

KITCHEN BOILER.

No. 107,817. Patented Sept. 27, 1870.

Fig. 1

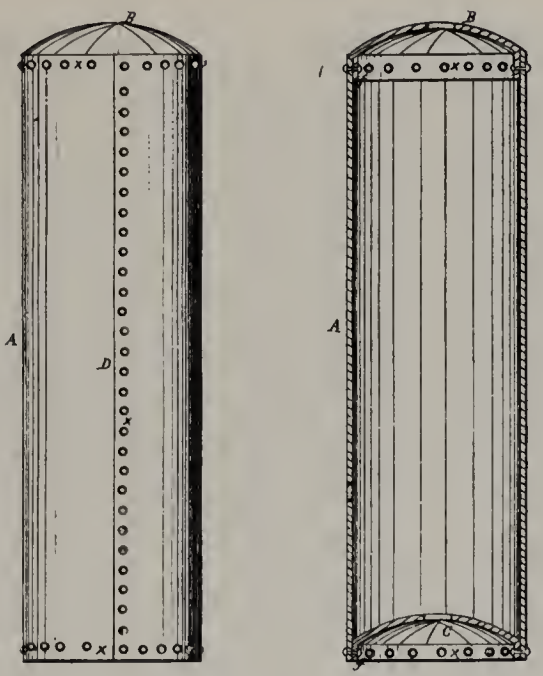


Fig. 2

Witnesses
James J. Johnston
A. C. Johnston,

Inventor
W B Scaife

UNITED STATES PATENT OFFICE.

WILLIAM B. SCAIFE, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN KITCHEN-BOILERS.

Specification forming part of Letters Patent No. 107,817, *dated September* 27, 1870.

To all whom it may concern:

Be it known that I, WILLIAM B. SCAIFE, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful article of manufacture, viz., a Kitchen-Boiler; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon.

The nature of my invention consists in making a new article of manufacture, viz., a kitchen-boiler, the ends, or tops, and bottom of which are constructed of wrought-iron, each forming a section of a sphere, and secured in and to the body of the boiler, in the manner and for the purpose hereinafter described.

To enable others skilled in the art to make and use my new article of manufacture, I will proceed to describe more fully its construction.

In the accompanying drawing, which forms part of my specification, Figure 1 is a side elevation of my improvement in kitchen-boiler. Fig. 2 is a vertical section of the same.

In the accompanying drawing, A represents the body or shell of the boiler, which is made cylindrical in form, and constructed of wrought-iron. The joint or seam D is secured by rivets and then brazed.

The ends or top B and the bottom C of the body or shell A are constructed of wrought-iron, and each form a section of sphere provided with a flange, *f*, and are fitted and secured in the body or shell A by rivets, as shown at *x*.

The joint around the ends or top B and bottom C are calked or otherwise made water and steam tight.

The body or shell A and the ends or top B and bottom C are provided with openings for the pipes used in connection with the boiler for producing the necessary circulation of water through it, and the heating device used in combination with the boiler for heating the water which may be used for kitchen, bath-room, or other purposes, which arrangement of pipes is well understood by the skillful plumber and gas-fitter.

The novelty of my new article of manufacture consists in constructing the ends or top and bottom of wrought-iron, and giving to each the form of a section of a sphere, the advantages of which consist of diminishing the weight, greatly increasing the strength and durability of the boiler without any additional cost.

The ends or top and bottom of the ordinary kitchen-boiler are made flat, and constructed of cast-iron. Such form and material for ends or tops and bottoms are very objectionable, for the difference between the expansion and contraction of wrought-iron and cast-iron renders it almost an impossibility to construct the joints around the ends or tops and bottoms so as to make them water and steam tight, and the frequent and varying pressure to which kitchen boilers are subjected cause the flat ends or tops and bottoms to buckle or vibrate, so as to crack around the flange, thereby rendering the boiler inoperative and worthless, and very often flooding the kitchen, bath-room, or other apartments of the house with water, which is a very annoying and distressing thing to the good housewife.

From the foregoing, the advantages of my new article of manufacture will be very apparent to the manufacturer, plumber, and gas-fitter, and also to the user of kitchen-boilers.

The dome-shaped top, in addition to its strength and durability, adds greatly to the symmetrical appearance of the boiler, making it handsome, useful, and durable.

Having thus described the nature, construction, and advantages of my new article of manufacture, what I claim as being new, is—

A new article of manufacture, viz., a kitchen-boiler, with the ends or top and bottom constructed of wrought iron, and each forming a section of a sphere, substantially as herein described, and for the purpose set forth.

W. B. SCAIFE.

Witnesses:
A. C. JOHNSTON,
JAMES J. JOHNSTON.

[87]

WILLIAM'S FINAL YEARS

Scaife Patent for the Dome Head Range Boiler

The typical industrial roof built by the Scaifes extended over one hundred feet, with a ventilator running most of the length. Besides the conventional pitched style, they also erected arched roofs, which they recommended as superior. Oliver superintended the work, while Gust Moeckel and William Boetcher were mentioned as foremen. Wages for the skilled roof crew members were $5.50 per day. An advertisement in the *Commercial* of 1871 is typical of many which the firm ran on roofing in that decade.

PITTSBURGH.

ROOFS

WM. B. SCAIFE,

Nos. 119 and 121 First Avenue,

PITTSBURGH, PA.,

ERECTS IN ANY PART OF THE UNITED STATES

Iron Roof Frames,

COVERED WITH

CORRUGATED IRON,

Or for Slate or other Covering, for Depots, Round-houses, Blast Furnaces, Banks, &c.

MANUFACTURES

Corrugated Iron

FOR ROOFING OR SIDING WOODEN FRAME BUILDINGS.

The demand for CORRUGATED IRON increases yearly as its merits become known, for Siding, as well as Covering all classes of Manufacturing Establishments where it is desirable to decrease the amount of wood used as a safety from fire.

When the financial panic of 1873 struck after the crash of Jay Cooke & Company's Philadelphia banking house, it only slightly

dented the Scaife roofing prosperity, although runs on Pittsburgh banks forced a number of establishments to close their doors. William's correspondence noted that local cash loans commanded nine per cent interest, and "a great depression" was strangling iron and other trades in the district.

The most unhappy result for the Scaifes came in default of several debtors and long-continuing collection difficulties. The experience so confirmed William's belief in the adage, "Corporations have no souls," that for years after he required contracts with unfamiliar firms to carry the personal endorsement of a well-to-do stockholder.

Beyond credit troubles, 1873 proved a year of particular good fortune for the Scaife shop, which embarked on structural projects, of a size not previously attempted, for the National Tube Works, McKeesport, and International Navigation Company, Philadelphia. The biggest of Scaife local undertakings came in the next year for the rolling mill of J. Painter & Sons, Carson Street, South Side, which comprised, "Roofing buildings in three sections, 290 feet by 54 feet; 328 feet by 59 feet, and 216 feet by 28 feet . . . (with) iron roof frames supported on iron columns . . . for $32,875." William later noted that this company, "Were so well pleased . . . they gave us another building 100 by 125 feet, tearing away the old wooden structures."

As roofing jobs got bigger and more frequent, the laboring corrugating machine broke down. On February 13, 1874, the Scaifes ordered another from Pusey Jones & Company, "To corrugate a sheet ten feet long. . . . Roller and eccentrics to be of steel—power and strength sufficient to corrugate No. 18." For the machine's design, William and Oliver jointly secured patents on June 15 and September 7, 1875. Detachable face plates of the Scaife device gave the particular advantage that, "Sheet metal can be corrugated with various sizes and contours of corrugations by a single machine. . . ."

Gust Moeckel, later to follow his father as superintendent of the plant, recalled that one day a workman had his hand caught

in the power-operated corrugating rolls. When the machinery was finally stopped and the man's arm disengaged, Gust said that the most gruesome sight he had ever witnessed was the man's arm extending to the ground.

Scaife corrugating techniques developed partly from efforts to rescue the expiring lifeboat trade. Bureaucratic regulations, with a familiar ring to modern ears, dealt the final blow to lifeboat manufacture about 1871. In William's words: "The board of supervisors passed a rule requiring all boats to be of No. 18 galvanized iron and sundry other restrictions, and not passing anything that first you did not send to Washington and attend in person to have it accepted. We declined to do this. . . . We had a large stock; and as we refused to make more, the inspectors found it necessary to pass what we had to let boats out. . . ." Later letters confirm that he quit lifeboat manufacture shortly after this "new steamboat law" went into effect.

Even as the lifeboat business collapsed and roofing increased, a new Scaife interest overshadowed both. William was founding the range boiler business, in which the firm stands today among the nation's leading manufacturers. The development marked the climax of his inventive career.

The range boiler was the forerunner of the familiar automatic water-heater, today located in the basement of most homes. Originally it stood in the kitchen, heated through a connection with the stove. In the 1860's, however, few families could enjoy such a luxury, since it was made of expensive copper or prohibitively heavy cast-iron. Hot water for home use had to be heated in vessels on the stove, a nuisance which complicated home cleanliness in a manner unthinkable to the modern housewife.

William, of course, had long been familiar with manufacture of boilers and their appliances through his steamboat and industrial work. Shortly after the Civil War his attention had been drawn particularly to the subject through his marketing of the patent Nicholson feed water-heater for mills; and it was in 1866, according to family tradition, that he began experiments on an economi-

cally priced boiler of sheet metal for the home. His earliest boiler cost figures are recorded in the following year when the product apparently was advanced from the planning to the sales stage.

On June 15, 1868, the earliest Scaife letter on range boilers pictures their manufacture, "We test our boilers both by steam and water pressure. . . . After they are finished ready for use we solder the seams as an additional security. We adopted this some

William B. Scaife in Later Years

weeks ago." By August, William was arranging to handle the western boiler trade of a New York plumbing supply house; and in December he was writing his faithful patent attorney, James J. Johnston, "We have concluded to try for a patent on the range boilers spoken to you about."

The snowballing demand for this product, in which a popular market had scarcely existed heretofore, gathered momentum in 1869. On June 1 William again pressed Johnston for the patent, urging that the range boiler was being used "more extensively

every day" and that production was improving "everytime we make a lot."

The urgently sought first patent, No. 94,779, for "An Improvement in Steam-Generators for Kitchen and Other Purposes," was granted September 11, 1869. This document shows soldering abandoned as a technique, and William basing his claim primarily on brazing. "The advantage of brazing the seams or joints in combination with riveting," his claim stated, "consists in avoiding all leakage at the joints, which leakage is a very great objection to their use." Not until next year, however, did William introduce his most important contribution to boiler design.

Whereas the original boiler heads and bottoms had been flat, Scaife patents of July 12 and September 27, 1870, established the master improvement—the dome head. This was formed of wrought iron, the same material as the body. The latter patent explains: "The novelty . . . consists in constructing the ends or top and bottom of wrought iron, and giving to each the form of a section of a sphere . . . diminishing the weight, greatly increasing the strength and durability of the boiler without any additional cost.

"The ends . . . of the ordinary kitchen-boiler are made flat, and constructed of cast-iron. Such form and material . . . are very objectionable for the difference between the expansion and con-

Cincinnati Fair Medal for Scaife Boilers

traction of wrought iron and cast-iron renders it almost an impossibility to construct the joints around the ends so as to make them watertight. . . . Frequent and varying pressure to which kitchen boilers are subjected cause the flat ends . . . to buckle or vibrate, so as to crack around the flange . . . flooding the kitchen or other apartments . . . which is very distressing to the good housewife.

"The dome-shaped top . . . adds greatly to the symmetrical appearance of the boiler, making it handsome, useful and durable."

Five more patents followed the original three. Two of these dealt with refinements in boiler heads, and the three others related to head dies and joints.

A rapid expansion of the market repaid William's efforts. In 1870, the year after the first patent grant, 1,725 boilers were sold for $39,677. During the same year, the Cincinnati Industrial Exposition awarded him its medal of excellence for black and galvanized iron boilers. In 1871, sales jumped to 2,187 boilers, bringing in $58,680. The following year again increased sales to 2,999 for a gross income of $72,341.

Then began an interminable series of price wars against inferior imitations invading the boiler field. Time and again William increased discounts to sales outlets and cut his profit margins to meet competition. He decided definitely on the policy that he would not be undersold. "We will place you in a competing condition with the poorest boilers on the market," became the burden of his letters to wholesalers. Frequently he wrote in such terms as these, "Though the bottom is knocked out of the market & margins are swept away . . . yet the instant trade gets to such a point that you cannot hold it, we will be prepared with some confidential proposition that will enable you to hold it."

In perusing the early boiler correspondence, bristling with far more acrimony than any other phase of the firm's varied experience, it seems a wonder that the business survived. Yet William's price cutting ultimately forced competitors to the wall. Gradually, but surely also, his rigid insistence on quality told. In 1875, he

SCAIFE'S PATENT

Wrought Iron Dome Head.

RANGE BOILER.

Earliest Boiler Photo from Scaife Price List

wrote a Louisville agent: "Our trade has very greatly increased owing to our keeping up the quality of our boiler notwithstanding the extremely low price, and we are selling very large amounts."

Manufacturing techniques were being equally improved. By 1875 a virtual assembly line was rolling out boilers to fill the greatest demand for any product in the history of the Scaife company. William, in the sunset of his career, had arrived at the status of a mass-producer. In refusing, for the first time, non-standard orders, he could now write with justifiable pride, "The work on our regular boilers is entirely systematized, so that the only alterations we make is in the number or location of the openings."

Much other work was turned out in these years. The Scaifes "built up quite a trade" in tanks for holding naphtha, as one of the few manufacturers whose vessels could handle this penetrating product. "The whole lot of (your tanks)," commented one customer, "appear to be so tight we cannot smell naphtha."

The firm made its first fire extinguisher bodies in 1873. It furnished iron flues, canopies, chimneys, domes and an ore crusher to two Nevada mining companies, and ventilators for Pittsburgh's new City Hall on Smithfield Street. Warm air furnaces continued to be erected, being "attended to solely by W. B. Scaife." Large orders of pipe, tubing and other facilities, even including "six charging wagons," were furnished to Edgar Thomson Steel Company to assist in equipping it to manufacture Bessemer steel rails in 1875.

Important changes within the family kept pace with the changing business picture. Charles married Priscilla Murry Verner December 24, 1867. In the words of William she was "a very excellent pious young lady with whom we are all well pleased," and her remarkable character was to exercise a great influence for good not only on her husband's life but also on the lives of all with whom she associated. Her grandfather, James Verner, had emigrated to America from County Armagh in Northern Ireland in 1806; and her father, likewise named James, was born on a

farm in Monongahela City in 1818. He later moved to a community north of Pittsburgh, on the Allegheny River, which was known as Verner's Station, but which now bears the name of Verona. He became a successful business man, establishing among other organizations the first street railway in the United States west of the Allegheny Mountains. This was the Citizens' Traction Company of which he was president for many years. On the maternal

W. B. & O. P. SCAIFE.

Machine for Corrugating Sheet Metal.

No. 167,412. Patented Sept. 7, 1875.

Fig. 1.

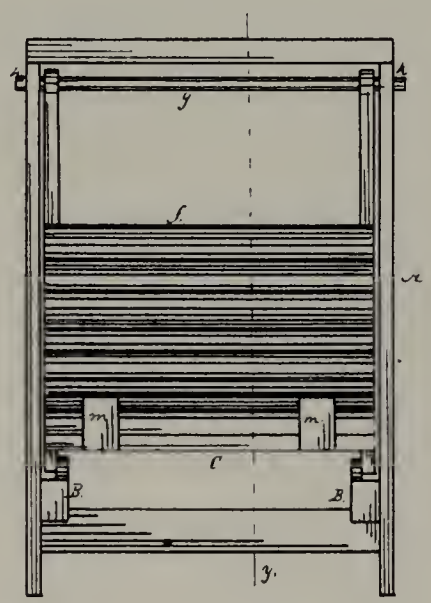
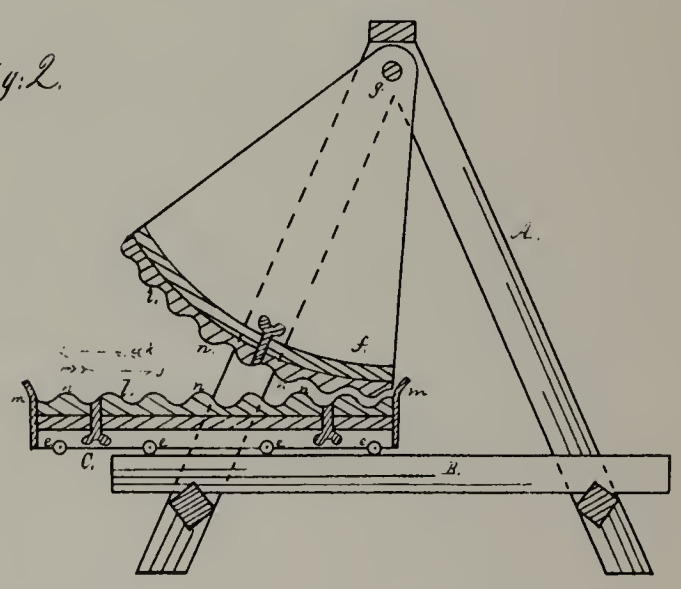


Fig. 2.



Witnesses.
A. C. Johnston
Wesley Johnston

Inventors.
Wm B. & O P. Scaife
By James L. Johnston
their attorney

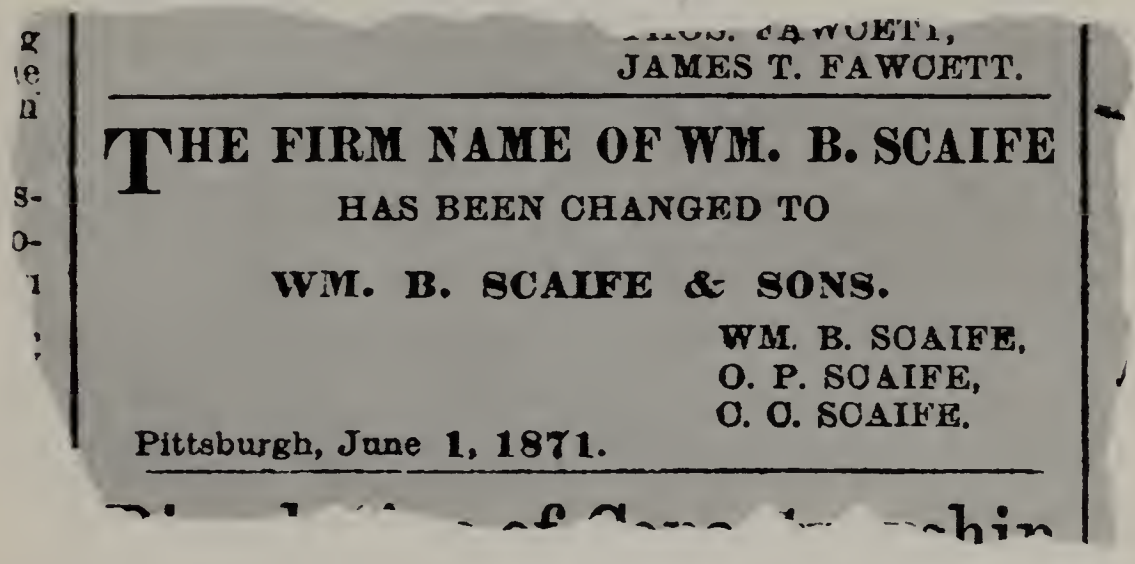
Scaife Corrugating Machine from U. S. Patent

side, Priscilla Verner was a granddaughter of Jeremiah Murry, founder of Murrysville, Pennsylvania, who had come to that locality in 1783 from the Cumberland Valley and established a general store.

Lauriston, William's third surviving son (1848-1926), after graduating from Yale in 1870, established himself in the practice of law at Boston. Lucien was graduated in 1873 from the same college with highest honors in German and Civil Engineering, and embarked for a post-graduate course at Freiberg, Germany.

With the four oldest boys thus evidencing their bents, William undertook to reorganize the firm as a partnership. The preface of an agreement of June 1, 1871, noted that his trust obligations of 1853 had been paid, and that Oliver and Charles had been employed in prosecuting the business which originated in that trust. The father and two working sons then agreed: ". . . that the said business shall be carried on hereafter under the name and style of Wm. B. Scaife & Sons—that the capital stock . . . is owned by William B. Scaife as Trustee; that the profits of the business shall belong to the three partners in the following proportions, viz.: to William B. Scaife as Trustee 52/100 . . . to Oliver P. Scaife 26/100 . . . and to Charles C. Scaife 22/100. . . ."

The Pittsburgh *Commercial* announced without comment:



JAMES T. FAWCETT.

THE FIRM NAME OF WM. B. SCAIFE
HAS BEEN CHANGED TO
WM. B. SCAIFE & SONS.

WM. B. SCAIFE,
O. P. SCAIFE,
C. C. SCAIFE.

Pittsburgh, June 1, 1871.

The agreement was amended on October 7, 1875 to provide that, after the death of William, Oliver and Charles should receive an equal share of profits, namely twenty-four per cent each, and the distributees of the William B. Scaife trust, comprising his widow and children, fifty-two per cent divided among them.

The stated purpose of these contracts, "to put the business upon a permanent footing," indicated William's desire to set his house in order in the few years yet allotted to him. Increasingly suffering from cancer, he began in the early 1870's a series of lonely pilgrimages to Healing Springs, Virginia, in a futile search for recovery. There, on December 23, 1874, he passed a notable anniversary: "This morning forty years ago my wife and I were

married. We have had a varied life and by God's blessing raised six sons and five daughters out of thirteen and so far all are an honor and a blessing to us."

Back in Pittsburgh he refused to lay aside the harness of active duties. He ran his business, enrolling it as a charter member in the Pittsburgh Chamber of Commerce in 1874. He joined in a protest against British tariff evasion; participated on the board of managers of the House of Refuge and the School of Reform. He was engaged in renovating his home at 143 (later 514) North Avenue in Allegheny when, on May 27, 1875, he found, "I am growing quite weak; with difficulty I walk from house to our office. . . ." Henceforward he could less frequently attend the shop, or even church.

On his sixty-third and last birthday, September 5 of that year, he received his old friend, Thompson Bell, of the trust fund; and was highly gratified at the gift of a painting by Charles of his grandson and namesake, three-year-old William B. Scaife. From his redecorated bedroom on October 7, William watched the parade wind through Allegheny park to open the Pittsburgh Exposition, ending an old era, heralding a new. That night he signed his will and the amended company agreement, which Lauriston had come on from Boston to prepare.

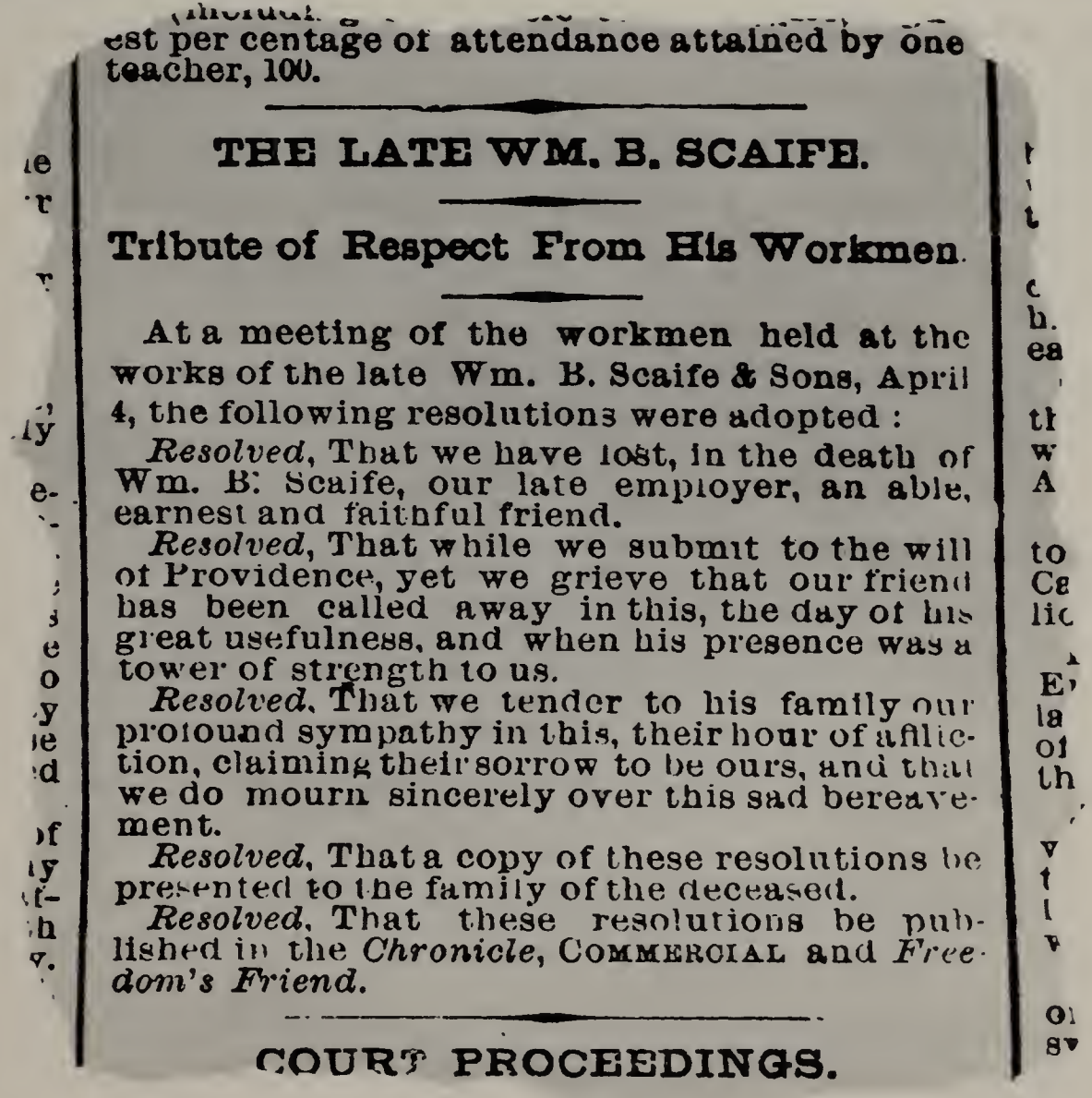
Throughout the winter his pain and weakness increased. As spring blossomed, all his eleven children, for the first time in many years, gathered beneath the home roof to comfort his last hours. William joined them in the singing of hymns, his voice sometimes ringing out "as if in perfect bliss."

He testified to the grief-stricken assemblage of his joy and comfort in religion. He spoke freely of his inmost thoughts, as Charles's diary records: "Father says that the greatest mistake of his life was that he had not enough charity for others . . . if he had to live over again he would never allow himself to become angry with anyone . . . says he sees all bright before him . . . no doubts . . . no clouds in his path now."

When informed he had not long to live, "Father said he was

entirely satisfied, that *he wanted all the family to keep out of debt* and keep together. . . . Then he held up his hand and said to Oliver, 'There is a deep satisfaction to know that hand was never raised in any nefarious business!' "

He had prayed to die on a Sabbath morning, and so the end came on April 2, 1876—"a lovelier Sunday never dawned," wrote Charles. "At his request no strange hands were to touch him," Oliver and Charles washed him and dressed his body. Eight of his hands, headed by Frantz Moeckel and George Garrison, carried his casket to burial. Of the many tributes he received perhaps he would have treasured most the following published in three Pittsburgh papers:



est per centage of attendance attained by one teacher, 100.

THE LATE WM. B. SCAIFE.

Tribute of Respect From His Workmen.

At a meeting of the workmen held at the works of the late Wm. B. Scaife & Sons, April 4, the following resolutions were adopted:

Resolved, That we have lost, in the death of Wm. B. Scaife, our late employer, an able, earnest and faithful friend.

Resolved, That while we submit to the will of Providence, yet we grieve that our friend has been called away in this, the day of his great usefulness, and when his presence was a tower of strength to us.

Resolved, That we tender to his family our profound sympathy in this, their hour of affliction, claiming their sorrow to be ours, and that we do mourn sincerely over this sad bereavement.

Resolved, That a copy of these resolutions be presented to the family of the deceased.

Resolved, That these resolutions be published in the *Chronicle*, COMMERCIAL and *Freedom's Friend*.

COURT PROCEEDINGS.

William left the business, which he had entered on forty-three years before, with a valuation of $151,730. At the last he had succeeded in his desperately hard, often-defeated life struggle to

provide for the future of his wife and children. Far greater was his contribution to the industrial community. He left the heritage of his work wherever steamboats ply the rivers, or drillers guide their bits or fill their tanks; where structural steel rises; and where pressure vessels are formed or sheet metal shaped.

Not a gifted executive, his destiny was that of the industrial pioneer. He could scarcely touch a machine or process without bettering it. A compulsion almost stronger than himself drove him to abandon work once developed—often to his loss—and to set his hands at fashioning industrial needs of the future. In civic and private life he stands among the men of rectitude, gentleness and courageous convictions (old-fashioned though some now appear) who gave the community its highest moral standards. "He was," Charles's diary often fervently repeats, "a *good* man."

Of his intellectual stature, Charles in his elder years wrote, "I seem but a boy to what he was."

VII

The Third Generation

1876-1890

To AMERICANS in tenements or "gingerbread" mansions, 1876 had one universal meaning—the Centennial, or one-hundredth anniversary of the United States. It is scarcely possible today to recapture the surge of national pride and excitement which burst forth in the repeated celebrations of that year. A sense of personal triumph in the nation's growth exhilarated every citizen. Among minor consequences, the event moved thirty-one-year-old Charles C. Scaife to set his pen to a new task:

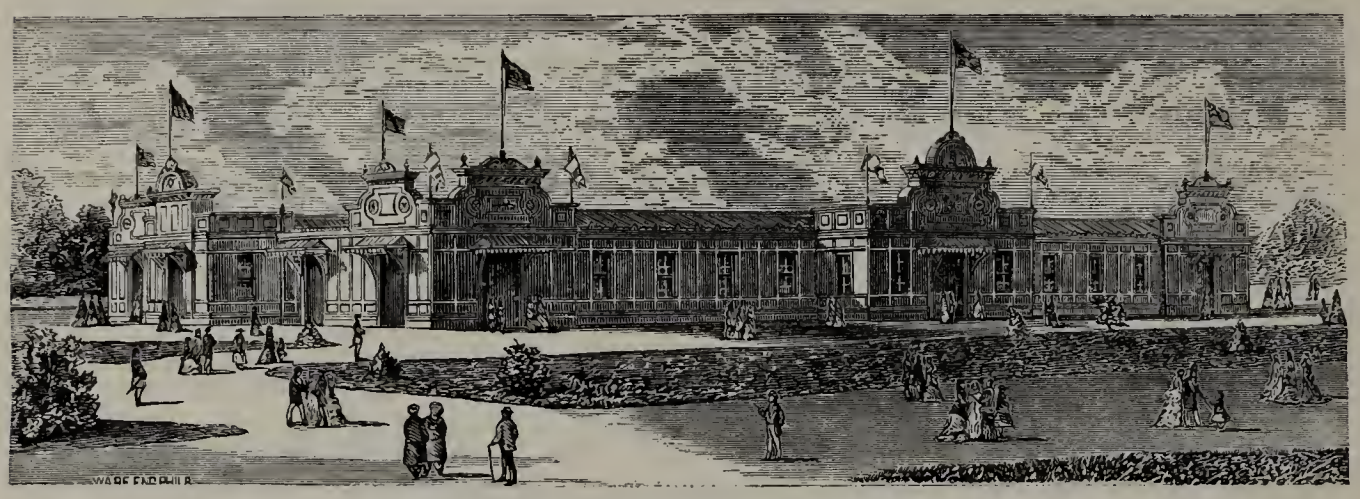
"January 1, 1876—We, Priscilla and I, thought that as this is the Centennial Year, we would keep a kind of diary. . . . We are living at 72 Western Ave., Allegheny. Our family consists of four children, James Verner Scaife, Wm. B. Scaife, Jr., C. C. Scaife, Jr., and Anna Verner Scaife. . . ."

The diary, which was to multiply into the chief source of Scaife company history for the next forty years, introduced one of the writer's salient characteristics a few entries later, "Finished another portrait of father . . . it is a pleasure to have work of this kind to do at home in the evenings. I cannot be idle; to me, idleness is the most terrible punishment."

Mainly, Charles's early notes relate to the Centennial, and particularly to the Centennial Exhibition at Philadelphia. This latter surpassed in grandeur any previous public display; and, by awakening Americans to the amazing progress of their science and industry, perhaps influenced its times more than any World's Fair since.

The Scaifes had achieved a real triumph by securing the contract to roof-frame and cover the Carriage Display House at the

Exhibition. Here lay an opportunity to demonstrate their craftsmanship to literally millions. No sooner, however, had their fore-



Carriage House at the Centennial

man, Boetcher, got on the job than he found himself hamstrung by a confusion as to plans between the Exhibit Commissioners and the general contractor. One day he was "pushed very hard," another ordered not to work.

Despite all the rush and wrangle, the building with its elegantly complex gables and fancy cornices arose complete in time for the grand opening, May 10. Pittsburgh papers headlined the Exhibition, dedicated by the prayer of Bishop Simpson (an uncle of Charles's wife, Priscilla) and address of President Grant, as unveiling, "A Brilliancy of Display No Pen Can Fitly Describe."

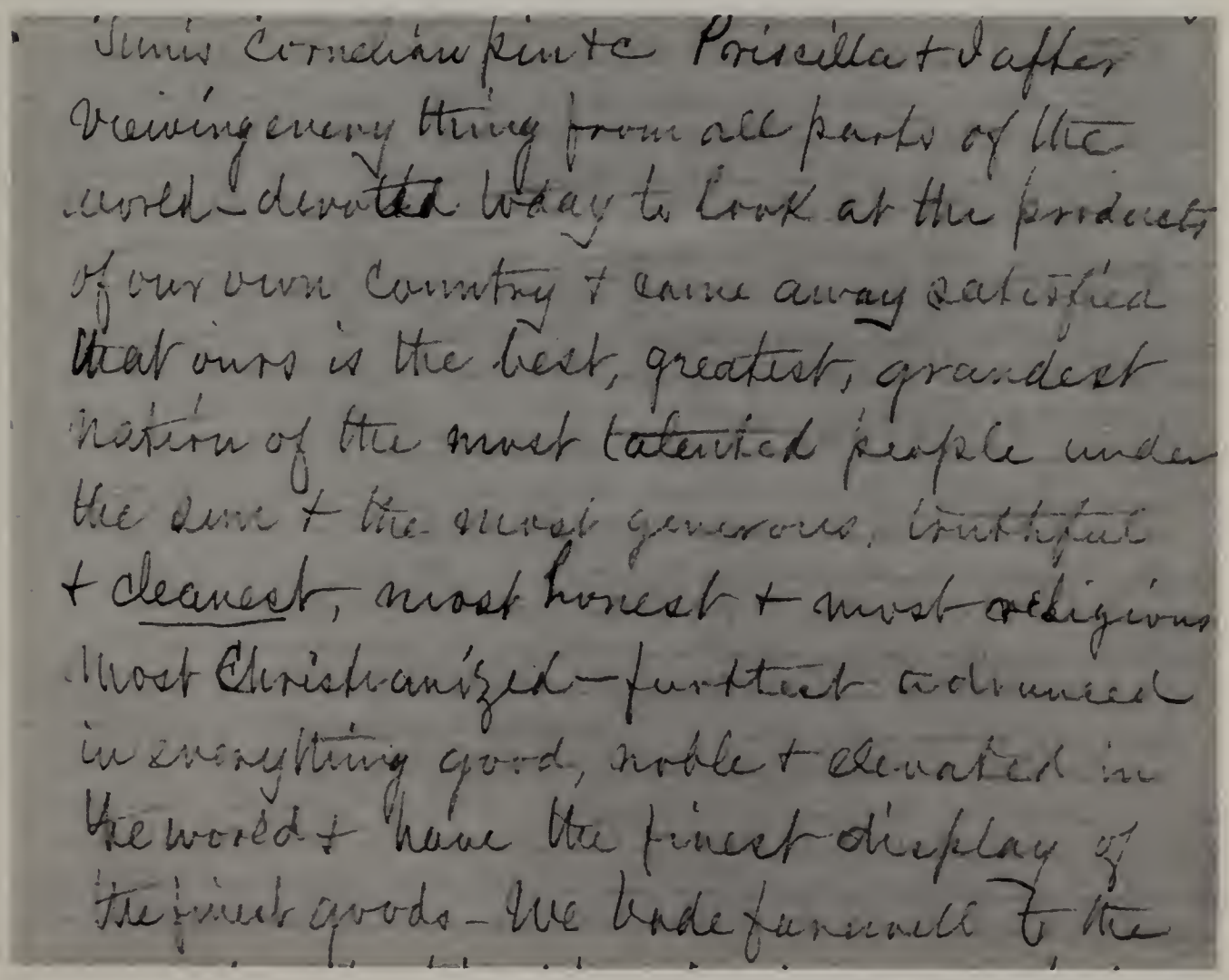
Excitement over the Centennial anniversary mounted to a peak as the Fourth of July approached. Charles told of Pittsburgh's mood: "July 3—in evening commenced to decorate for tomorrow. I purchased over four hundred flags, shooting crackers, torpedoes, Roman Candles, etc. . . . set up a display. City profusely decorated . . . during evening the roar of cannon and the ringing of bells made the whole air filled with the rejoicing of the new Centennial.

"July 4—This is the 100th Glorious 4th of July!!! We could sleep but little last night. Such noises I never heard . . . before 5 o'clock the people all appeared to be out. . . ." The tremendous celebration continued through midnight.

In September Charles shepherded his wife and four children

into a crowded train for their own visit to the Centennial Exhibition in Philadelphia, a tiny addition to the nearly 10,000,000 spectators whom it attracted. The first view left them "delighted, only we know that in eight days we can see but a small part of the exhibits." Next day, September 9, Charles noted how the displays brought out his children's characters: "Verner shows a *great* talent for machinery, indeed his power of comprehension in this line is astonishing. Charles has a great liking for animal pictures. . . . Little William is pleased with everything."

On the fifteenth, with the children still going strong but the parents "awfully tired," Charles's diary summarized his Centennial impressions in words remarkable less for exaggeration than as a typical American reaction:



Sunday Corneliaw Kinsta Priscilla + Daffer
Viewing every thing from all parts of the
world – devoted today to look at the products
of our own Country + came away satisfied
that ours is the best, greatest, grandest
nation of the most talented people under
the sun + the most generous, truthful
+ cleanest, most honest + most religious
most Christianized – furthest advanced
in everything good, noble + elevated in
the world + have the finest display of
the finest goods – We bade farewell to the

The industrial revelations of the Exhibition, which included that curious new device, the telephone, set business humming. Fall elections further stimulated commerce by placing in the White House a Republican, Rutherford B. Hayes, evaluated by

PHILADELPHIA
NEW BRIGHTON
BELMONT WATER WORKS
LUMBER
HORTICULTURAL HALL
MACHINERY HALL
BROADWAY AVENUE
AGRICULTURAL AVENUE
PAVILION
WOMENS
U.S. GOVERNMENT
EX. BUILDING
TEMPERANCE FOUNTAIN
MACHINERY HALL
ILLINOIS
WISCONSIN
MICHIGAN
GEORGES HILL RESERVOIR
BELMONT DRIVE
STATE AVENUE

Balloon View of Centennial Exhibition Grounds

Charles as "a splendid Christian man—has been Governor of Ohio three times and is a good Methodist."

How the Scaife shop was equipped for a role in building our highly favored nation's second century is told in *Pittsburgh and Allegheny in the Centennial Year:*

"ARCHITECTURAL IRON WORKS

"A manufactory for irons for architectural purposes is one of the special businesses of Pittsburgh. . . . W. B. SCAIFE & SONS, 119 First Avenue, make it their chief business to shape, prepare and frame iron for . . . building railroad depots, rolling mills and . . . buildings used as manufactories. . . . The works occupy 15,000 sq. ft. on the ground floor, extending from First to Third Avenues, the chief portions being three stories in height. The machinery . . . of great variety represents an investment of $30,000; and the capital in ground, buildings and machinery alone about $150,000. The establishment gives employment to an average of sixty hands, to whom $40,000 of wages are annually paid. . . . Consumption of iron . . . has been from eight hundred to 1,000 tons yearly. The firm also manufactures 'Scaife's patent dome-head range boilers.' This is the largest range boiler works in the United States; the greater portion of their boilers goes to Eastern cities, and . . . these boilers are ordered from and exported to Germany."

In the year this appeared, Oliver and Charles erected a 100 foot by 500 foot rolling mill building at Catasauqua, Pennsylvania, and began a series of roofing jobs for National Tube Company at McKeesport, which included a butt weld mill, boiler house and foundry. Through National Tube, also, they bid as sub-contractors on the Long Branch, New Jersey, pier. During negotiations Charles turned his art to good account by painting a portrait of the father of a National Tube official. That gentleman expressed himself as highly pleased with the result—and the contract was awarded shortly after.

Other notable post-Centennial jobs were the erection of mill buildings for Pittsburgh Steel Casting Company; roofing for the

Lewis, Oliver & Phillips' foundry, an iron building for Smith, Sutton & Company, lap weld pipe mill for A. M. Byers & Company, billet house roof for Edgar Thomson Steel Company, and boiler house roofs for Brilliant Oil Works and the Dixmont Asylum. The following roofing ad ran regularly in the *Commercial* from July 24, 1876:

"WM. B. SCAIFE & SONS

Office—No. 119 First Avenue
Pittsburgh

Manufacture and Erect

IRON ROOF FRAMES

IRON MILL BUILDINGS

WROUGHT IRON BRIDGES

And Other

IRON STRUCTURES

Proposals, with plans, specifications and Lithographs furnished

CORRUGATED IRON

For roofs and sides of buildings

Sole Manufacturers of

SCAIFE'S PATENT DOME HEAD RANGE BOILERS"

At the start of the 1880's Charles's diary reported the shop running 8,000 sheets of corrugated iron behind orders; and buying its iron in hundred-ton lots. Roofs and siding of Scaife fabrication

rose from Illinois to South Carolina; and steady structural activity continued as a backbone of shop operations for the entire period of 1876-90.

Boilers, too, rolled out in mounting production through this decade and a half. The Scaifes successfully fought cut-rate competitors, and began filling orders for boilers to withstand three hundred pounds pressure. In 1879 Charles's diary recorded, "We have more boilers ordered than we ever had at any one time before." Charles secured favorable rail rates, with the Baltimore & Ohio granting him secret "drawbacks," common practice of the times, and the Pittsburgh & Lake Erie agreeing to handle his boilers at its fourth class rate.

In 1881 an unprecedented landslide of orders hit the boiler department. On March 4 Charles found himself "over 300 boilers short of our orders." Despite working his hands at night, demand steadily outdistanced the shop's best production efforts, until on July 1, Charles reported, "1,511 range boilers behind our orders and no stock." By the close of the eighties the company stood more firmly established than ever as the boiler trade leader.

While the Scaife brothers were enlarging the scope of their sheet iron fabricating, socialist unrest had begun to churn beneath the surface of the business community. The spectacular Pittsburgh "Railroad Riots" exploded in July of 1877. Trouble began with a pay reduction and walk-out on the Baltimore and Ohio Railroad. Next the Pennsylvania line cut its wages—simultaneously doubling the number of cars to be handled by a train crew. On July 19 Charles's diary noted, "Big strike of men on the Penna. RRd. at outer Depot. No freight allowed to go out."

Railroaders picketed in comparative order next day, but town toughs, millworkers, discontented citizens began to swell their ranks. Anarchistic agitators harangued the crowd. Several newspapers applauded the fight against "the railroad vultures." Panicky authorities called for militia from Philadelphia to protect railroad property. Infuriated by this "foreign" intervention, the growing mass of strike-sympathizers resisted—with inevitable results.

"July 21—the Pittsburgh, Fort Wayne & Pan Handle men have struck. Matters look serious," Charles's diary reported. "The B. & O. R. R. not receiving freight. Military arrived here from Philadelphia. In the afternoon the Phila. regiment fired into the crowd & many killed and wounded. Intense excitement." In the

Wreckage Left by Rioters at Pennsylvania Railroad's Twenty-eighth Street Roundhouse

destruction that followed, newspapers speculated the oft-predicted war between capital and labor had begun. Charles's eye-witness account continued:

"July 22—The strikers joined by an immense mob fired the R. R. cars on the PRR track last night. The Phila. soldiers driven in the R. R. round house. Attempts to burn them up by pushing burning cars up to the round house. The soldiers kept firing, killing and wounding many. The mob broke into the Hutchinson Battery & captured the cannon—also broke into & took all the

arms, ammunition & knives from the pawn shops and stores where such things are kept.

"After daylight the fire got so hot, the soldiers came out of the round house & fired down Twenty-eighth Street and marched out Penn. They were fired on by the mob all along the route & they returned the fire, they losing men and killing in turn. They sought refuge in the Arsenal but were refused admittance. They then retreated out to Sharpsburg Bridge, crossed over & went out as far as the Workhouse.

"The burning and stealing goes on terribly—1,800 cars of valuable freight ransacked and burned. They set fire to the Union Depot Hotel, the immense elevator, the Pan Handle offices and Depot. The sights I saw were horrible. The loss estimated at from $10 to $15 millions. The mob have complete possession of the city. The drunkenness & pillage & setting fire continues, no life or property is safe. The fire department can do nothing—the mob cuts the hose and threatens death to the firemen if any water is thrown on R. R. property.

"July 23 . . . The mob increased by flocks . . . of miners and thieves," Charles wrote. "City militia reorganized and citizens clubbing together for protection of property. . . . No women or children allowed on the streets as per the Mayor's order. . . . In Allegheny the passenger trains are run by the strikers and great crowds of citizens & mob everywhere.

"We were notified by the Mayor's police to close up but we did not allow our men to leave the shops. . . . Quite a number of . . . hard looking fellows kept passing today & some halting and swearing because we were working but no trouble. . . ."

For more than ten days from the original outbreak, waves of disorder swept the city in diminishing violence. It was not until July 30, when troops under General Hancock regained control, that Charles could report, "The men gone to work on the R. R. . . . we got off seventy-six boilers."

Throughout that Pittsburgh summer work stoppages slowed the mills. Groping for an explanation Charles, on August 4, 1877,

sceptically noted, "It is said that men with families cannot exist on less than $1.00 a day and it is necessary to get situations where they can make full time in order to keep body and soul together." Not long after, he advanced his own shop helpers from $1.00 to $1.12½ daily.

To Charles, who had shut down his works early to allow his workmen to vote in the 1880 presidential election, the assassination of James A. Garfield came as another shock. Like many Pittsburghers, he paid the last tribute of rising at 5 A.M. on September 24, 1881, with Priscilla, Anna and Charles, to see the funeral train pass through. One further minor calamity, which their descendents will never suffer, bothered Pittsburghers in 1881. On November 22 Charles noted, "The horse disease called 'pink eye' (the epizootic) is getting worse. It attacks some street car lines and lets others alone. The Citizens' line has not run a car for more than a week . . . the Union line has many (horses) sick."

Through all these trials, a growing pay roll reflected the steady expansion of the Scaife firm. In the latter seventies Charles's diary frequently reported "biggest payday yet." His November 20, 1880 entry showed ninety-eight men employed. That year he described as "one of the busiest we ever had." On February 4 of 1881 he reported, "We are running one hundred men and plenty of work for them." His November 18 entry continued the story, "We are very busy in every department & cannot possibly fill what orders we have now in this year."

Among various causes for this prosperity, the Scaifes could look back to the visit of Henry W. Caldwell, of Caldwell & Watson, St. Louis, to their shop on March 11, 1878. The Pittsburgh sheet iron men agreed to manufacture Caldwell's patented conveyor, "They to pay us for getting up the patterns & to give us all their trade." Charles added, "I made plaster of Paris patterns today."

This product consisted of a spiral, wrought iron flight, affixed to a tube or rod, for conveying grain or other material, as will be readily understood from the advertising illustration in this chap-

ter. Charles and Oliver set to work on it energetically. The former devised an elaborate plan for making a conveyor flight out of one continuous length. In succeeding months, a few orders, increasingly intermixed with personal problems, began to flow in from Caldwell in the field.

Poor Caldwell! He had at first every trouble of the stage inventor. He broke with his partner; found himself unable to scrape along on his own resources. On January 8, 1880, he was forced to transfer his entire patent to the Scaifes, reserving only a royalty to himself. As the year progressed he sunk into ever more desperate financial shape, while clinging with bulldog tenacity to a golden dream of wealth to be reaped by his conveyor.

Letter after letter harped on the advantages of his product, which "moves material in a direct line & does not mix it or wallup it about like others." Meanwhile he reported himself, "In want of means to actually live upon—must have $1,000 for bills and Cincinnati Millers' Exhibit." Charles advanced the funds, and the Exhibit brought in 3,500 feet of conveyor orders. From then on, conveyor sales began to mount steadily.

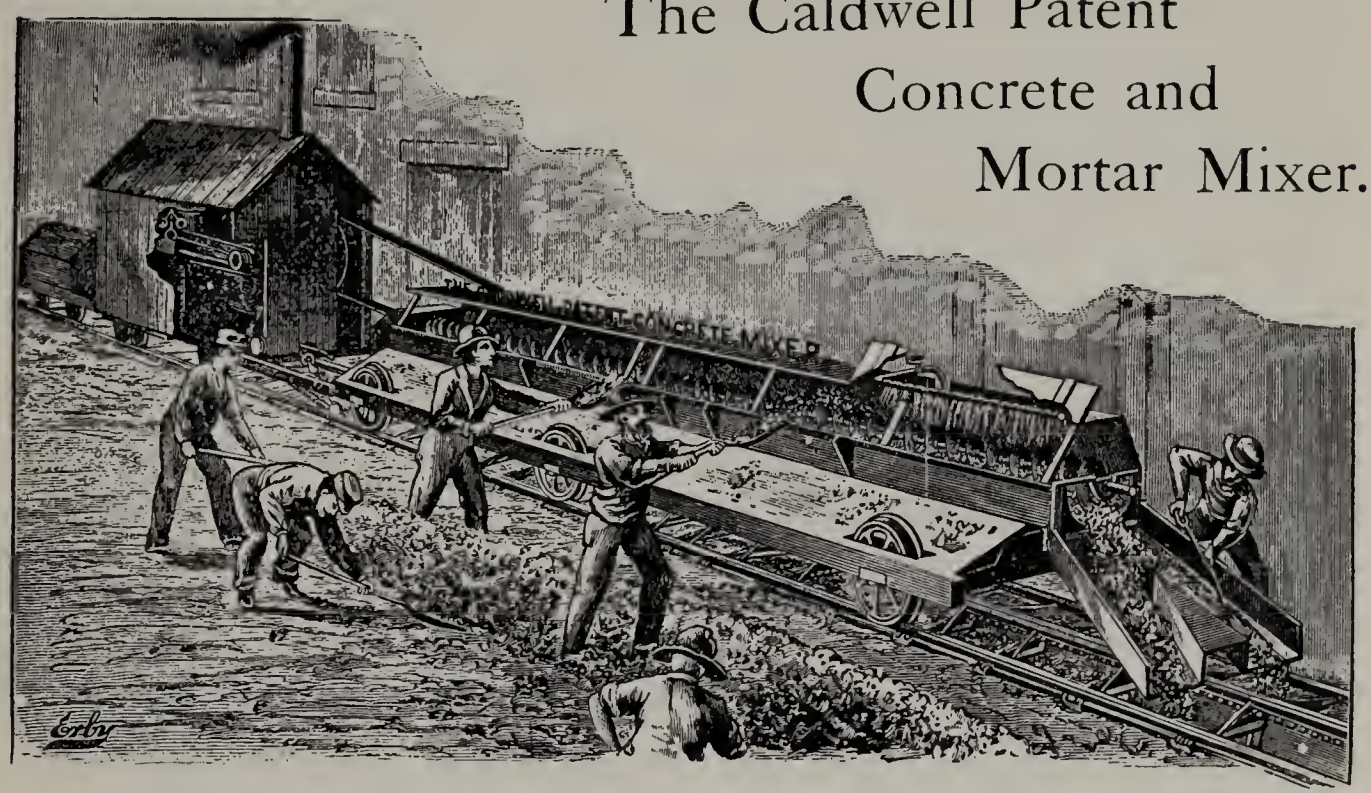
Charles and Caldwell jointly worked at improving the conveyor and creating a host of new adaptations and accessories for it, the latter including hangers, driving ends, conveyor boxes, linings and flights of various types. Conveyors were erected for power transmission and to handle a great variety of raw materials. By August 15, 1881, Charles's diary showed, "We are 8,000 feet of conveyor orders behind without counting any of Caldwell's Chicago orders, and out of stock." Shortly after he noted, "Furnace for forming flights in Annex nearly completed. . . ."

On December 29 of the same year, his entry reads, "Very busy making shipments. Got off about $4,600 of conveyor alone." Coincidentally, to make room for the booming conveyor manufacture, "We have Bruggerman's men tearing out third story of Number 87 Second Avenue to fit up for making conveyor." On February 10, 1882, he wrote, "The spring attachment made to the press for making flights as suggested by OPS was put in opera-

tion today in the second story old shop and looks to be a perfect success."

Even an elaborate concrete mixer for railroad use was eventually added to the growing Caldwell line. The inventor became a warm personal friend of the Scaife's and stopped (often with his family) at Charles's home when in Pittsburgh. The final success, which crowned Scaife-Caldwell design, manufacture, and sales

The Caldwell Patent Concrete and Mortar Mixer.



One of Numerous Ingenious Scaife-Caldwell Products — a Cement Mixer Used in Laying Rail Lines

development of this product, is suggested in *Wealth and Industries of Pittsburgh*, 1890:

"Messrs. Wm. B. Scaife & Sons are . . . sole manufacturers of Caldwell's Patent Conveyor, of any diameter, of either wrought iron, steel, copper, galvanized iron or brass, for conveying grain of all kinds, tanbark, nut coal, rice, cotton-seed, malt, concrete, sawdust, crushed ores, etc.

"This unrivalled conveyor is used by starch-works, glucose works, tanneries, saw-mills, phosphate rock crushers, rice-mills, purifiers, etc. It is made either right handed or left handed, and on a solid or hollow shaft of any desired length."

Another new project begun by the Scaifes shortly after the Centennial was bridge building. On October 18, 1877, they gave a contract to two independent engineers, "To make drawings, plans and specifications for bridges from which we make up our estimate. . . ." Next month lithographed folders announced the arrangement:

"We would respectfully call the attention of the County and City Authorities and all other parties desiring Bridges designed and erected, that we are now prepared to furnish designs and estimates and erect Wrought-Iron Bridges of either Truss, Arch or other approved forms.

"The Engineering department is in charge of Messrs. J. H. McRoberts and Horace Stilley, at 150 Fourth Avenue, and this added to our years of experience in erecting Iron Buildings, Roof Frames and other Iron work, we think will be sufficient guarantee that any work entrusted to us will be well executed. . . ."

While Charles's diary of April 4, 1878, records, "The bids for Allegheny County Bridges opened this P. M. & we got none of them," the company later furnished trusses and iron work for bridges on numerous occasions. Records of the chief bridge building years do not survive, but continued advertising and other references show activity in this field to the end of the century.

Among other specialties of the time were corrugated iron for powder magazines and elevator buckets. The latter became quite profitable, with orders mounting into many hundreds a year in the eighties. A note of April 2, 1882, signed by H. W. Caldwell, prophesied, "In three years the Scaife steel bucket will be so manufactured it will take the market on price and quality."

Blaugas cylinders, used principally for lighting in railway cars, grew into a considerable business. Although chief customer was Safety Car Heating & Lighting Company, New York, they came to be sold to roads all over the country. Gasoline tanks, calcium cylinders, fire extinguisher bodies and various other product and pressure containers became staples of Scaife production. An advertisement in *Mercantile, Manufacturing and Mining Interests of*

Pittsburgh, 1884, shows major lines then handled, and incidentally is the first public statement stressing the company's founding date:

ESTABLISHED 1802.

WM. B. SCAIFE & SONS,

Office, 119 First Avenue,

Works, First, Second and Third Avenues, PITTSBURGH, PA.

DESIGN, CONSTRUCT AND ERECT

Iron Roof Frames, Iron Bridges, Corrugated Iron,

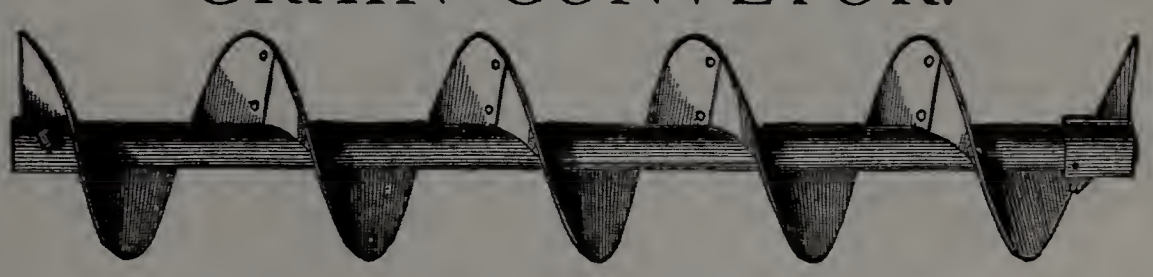
SCAIFE'S PATENT WROUGHT IRON

Dome-Head Kitchen Range Boilers.

SOLE MANUFACTURERS OF

Caldwell's Patent Wrought Iron Hollow Shaft

GRAIN CONVEYOR.



For sale by Mill Furnishers generally.

BROWNELL'S PATENT COPPER LINED BOILERS.

Sheet and Wrought Iron Work

OF MANY KINDS, AND

COPPER PIPES.

Previously, two years after the Centennial, the control of the company had been centralized in the male members of the family. At that time, the ladies sold out the shares left them by William

B. Scaife's will. The *Commercial Gazette* recorded the change as follows:

"CO-PARTNERSHIP NOTICE

The widow and daughters of the late Wm. B. SCAIFE have withdrawn their respective interests from the firm of

WM. B. SCAIFE & SONS

The business will be carried under the same name as heretofore by the undersigned.

Oliver P. Scaife
Charles C. Scaife

Pittsburgh, January 1, 1878"

Repeated additions to plant space were made in the late seventies and the eighties. Extra stories were set on several buildings, annexes erected, and a steam elevator added. A fire in the shop on April 10, 1880, the thirty-fifth anniversary of the great Pittsburgh conflagration, opened the way for further renovation. The warehouse at Number 87 Second Avenue was acquired, and the machine shop moved there; all in all, the Scaife properties on First, Second and Third Avenues became a veritable honeycomb of shops.

In equipping the offices, Charles took a revolutionary step on February 12, 1878, when, "Mr. David of the Telephone Company called to ask for order for putting telephone in our office. It seems a good thing for our purpose." The invention was installed about two years after Charles had been introduced to it at the Philadelphia Exhibition. First telephone use mentioned occurred in taking a National Tube order. In due course, the name of Wm. B. Scaife and Sons, appeared in Pittsburgh's first telephone book, which listed a total of one hundred seventy phones in its four pages of subscribers.

Brother Walter graduated from Central High as valedictorian, being "the third of four brothers who have graduated from the High School with the same honor." Brother Marvin began to work for the firm.

Charles, who earlier devoted his leisure to painting and to inventing such gadgets as a lemonade-charging fountain and a re-

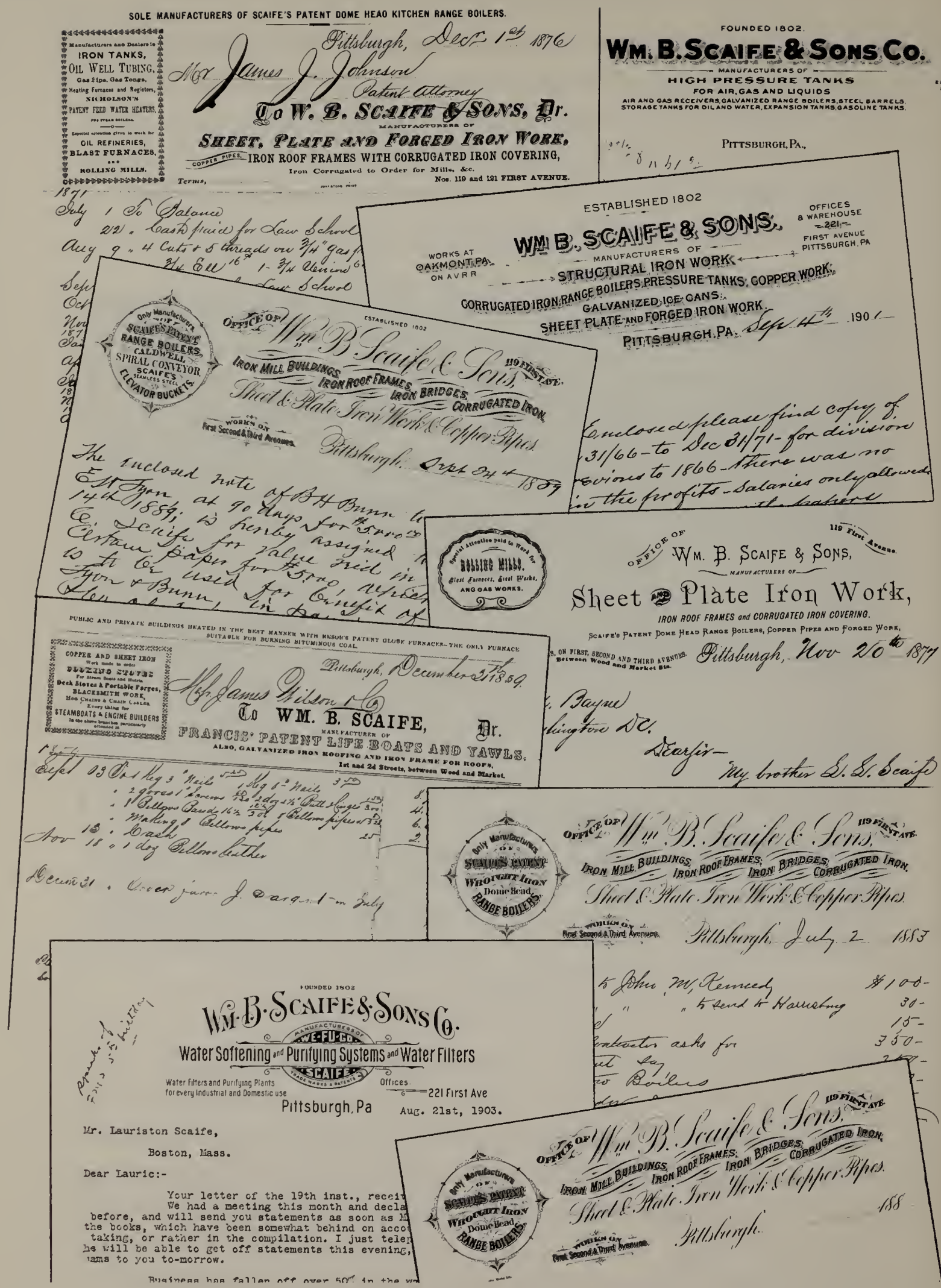
frigerated fruit can, no longer had time for such hobbies as the nineties approached. He acquired a large home at 1136 Western Avenue, Allegheny, where entertainments for many civic causes and charities were staged, intermixed with social events for the youngsters.

In the business community, Charles became a director of Peo-

IRON ROOFS, ENGINES, 71
Wm. B. Scaife & Sons,
PITTSBURGH, PA.
Office, 119 First Ave. Works, 1st, 2d and 3d Aves.
SEND FOR CIRCULARS AND PRICE LISTS.
CORRUGATED IRON IN THREE STYLES.
Iron Mill Buildings and Iron Roof Frames.
Of any required design, made and put up by us at any point desired.
CORRUGATED IRON,
FOR ROOFING AND SIDING.
Scaife's Patent Wrought Iron Dome-Head
KITCHEN RANGE BOILER.
SHEET AND PLATE IRON WORK OF MANY KINDS.

Style of Scaife Corrugated Iron Roof as Shown in Pittsburgh and Allegheny Directory, 1876

ple's Insurance Company and the Crushed Coke Company. He interested himself in school affairs, officiating as chairman of a gathering honoring Robert Lea for thirty year's service as director of Fifth Ward Schools. He became a backer of neighborhood athletics, the *Gazette* of May, 1889, reporting: "In amateur athletic circles the names of Colonel J. M. Schoonmaker, Mr. C. C. Scaife and Mr. J. E. Schwartz are quite an important factor. It is to (their) untiring efforts and liberality . . . that athletic and field


SOLE MANUFACTURERS OF SCAIFE'S PATENT DOME HEAD KITCHEN RANGE BOILERS.
Manufacturers and Dealers in
IRON TANKS,
OIL WELL TUBING,
Gas Pipe, Gas Tongs,
Heating Furnaces and Registers,
NICHOLSON'S
PATENT FEED WATER HEATERS,
OIL REFINERIES,
BLAST FURNACES,
AND
ROLLING MILLS.
Pittsburgh, Dec. 1st 1876
Mr. James J. Johnson
Patent Attorney
To W. B. SCAIFE & SONS, Dr.
MANUFACTURERS OF
SHEET, PLATE AND FORGED IRON WORK,
COPPER PIPES. IRON ROOF FRAMES WITH CORRUGATED IRON COVERING,
Iron Corrugated to Order for Mills, &c.
Terms,
Nos. 119 and 121 FIRST AVENUE.
FOUNDED 1802.
Wm. B. SCAIFE & SONS CO.
MANUFACTURERS OF
HIGH PRESSURE TANKS
FOR AIR, GAS AND LIQUIDS
AIR AND GAS RECEIVERS, GALVANIZED RANGE BOILERS, STEEL BARRELS,
STORAGE TANKS FOR OIL AND WATER, EXPANSION TANKS, GASOLINE TANKS.
HOME OFFICE
221 FIRST AVENUE
PITTSBURGH, PA.
PITTSBURGH, PA.,
ESTABLISHED 1802
WORKS AT OAKMONT, PA. ON A.V.R.R.
WM. B. SCAIFE & SONS,
OFFICES & WAREHOUSE
221
FIRST AVENUE
PITTSBURGH, PA
MANUFACTURERS OF
STRUCTURAL IRON WORK
CORRUGATED IRON, RANGE BOILERS, PRESSURE TANKS, COPPER WORK,
GALVANIZED ICE CANS,
SHEET PLATE AND FORGED IRON WORK.
PITTSBURGH, PA. Sept 4th 1901
Only Manufacturers of SCAIFE'S PATENT RANGE BOILERS, CALDWELL SPIRAL CONVEYOR, SCAIFE'S STEAMLESS STEEL ELEVATOR BUCKETS
OFFICE OF Wm. B. Scaife & Sons, ESTABLISHED 1802
119 FIRST AVE.
IRON MILL BUILDINGS, IRON ROOF FRAMES, IRON BRIDGES, CORRUGATED IRON,
Sheet & Plate Iron Work & Copper Pipes.
WORKS ON First Second & Third Avenues.
Pittsburgh, Sept 24 1859
Special Attention paid to Work for ROLLING MILLS, Blast Furnaces, Steel Works, AND GAS WORKS.
OFFICE OF
119 First Avenue.
WM. B. SCAIFE & SONS,
MANUFACTURERS OF
Sheet AND Plate Iron Work,
IRON ROOF FRAMES and CORRUGATED IRON COVERING.
SCAIFE'S PATENT DOME HEAD RANGE BOILERS, COPPER PIPES AND FORGED WORK,
ON FIRST, SECOND AND THIRD AVENUES, Between Wood and Market Sts.
Pittsburgh, Nov 20th 1877
PUBLIC AND PRIVATE BUILDINGS HEATED IN THE BEST MANNER WITH NESON'S PATENT GLOBE FURNACES—THE ONLY FURNACE SUITABLE FOR BURNING BITUMINOUS COAL.
COPPER AND SHEET IRON
Work made to order
HEATING STOVES
For Steam Boats and Hotels
Deck Stoves & Portable Forges,
BLACKSMITH WORK,
Hoe Chains & Chain Cables
Every thing for
STEAMBOATS & ENGINE BUILDERS
In the above branches punctually attended to
Pittsburgh, December 31st 1859.
Mr. James Wilson
To WM. B. SCAIFE, Dr.
MANUFACTURER OF
FRANCIS' PATENT LIFE BOATS AND YAWLS,
ALSO, GALVANIZED IRON ROOFING AND IRON FRAME FOR ROOFS,
1st and 2d Streets, between Wood and Market.
Only Manufacturers of SCAIFE'S PATENT WROUGHT IRON Dome Head RANGE BOILERS
OFFICE OF Wm. B. Scaife & Sons, 119 FIRST AVE.
IRON MILL BUILDINGS, IRON ROOF FRAMES, IRON BRIDGES, CORRUGATED IRON,
Sheet & Plate Iron Work & Copper Pipes.
WORKS ON First Second & Third Avenues.
Pittsburgh, July 2 1883
FOUNDED 1802
WM. B. SCAIFE & SONS CO.
MANUFACTURERS OF
SCAIFE
Water Softening and Purifying Systems and Water Filters
Water Filters and Purifying Plants for every Industrial and Domestic use
Offices. 221 First Ave
Pittsburgh, Pa
Aug. 21st, 1903.
Mr. Lauriston Scaife,
Boston, Mass.
Dear Lauric:-
Your letter of the 19th inst., receiv
We had a meeting this month and decla
before, and will send you statements as soon as
the books, which have been somewhat behind on acco
taking, or rather in the compilation. I just tele
he will be able to get off statements this evening,
ams to you to-morrow.
Business has fallen off over 50% in the

A Variety of Scaife Letterheads

sports have attained such a high state of perfection in this vicinity."

One of the most gratifying of the crowded events of the time took place on February 13, 1888. Describing it as "of no ordinary interest," the *Chronicle Telegraph* reported:

"A pleasant atmosphere pervades Wm. B. Scaife & Sons, Number 119 First Avenue, this afternoon.

"This establishment is the oldest by many years of any in Pittsburgh. It was founded in 1802, and ever since it has been the custom to present a silver service to every employee on completing twenty-five and forty years with the firm. Four of the present force . . . have just completed their twenty-five years, and . . . were presented with an elegant silver service of six pieces. . . .

"They were Gustave A. Moeckel, Henry Hoffman, West Schaeur and J. J. A. Fries. Mr. Moeckel is foreman and his father was foreman before him. . . . The father of Mr. Fries began to work for the firm sixty years ago and continued with it up to his death. . . .

"George Garrison, of Lawrenceville, is another old employee who has worked for the firm forty-six years . . . and has received his twenty-five and forty year presents. There are fifteen or twenty men working in the establishment who have received twenty-five year presents. . . ."

VIII

Further Growth of the Business

1891-1901

OLIVER and Charles began about the start of the nineties to have disagreements which bordered on the acrimonious. There were discussions of dissolving the partnership. "Charles has already purchased Marvin's interest in Wm. B. Scaife & Sons," Lauriston Scaife wrote his sister, May, as the crisis reached a head on February 3, 1891, "and is about to buy out Oliver."

In fact, Charles had offered either to sell out to Oliver or to buy the latter's interest in the business from him. Oliver accepted the latter alternative; and Lauriston, acting for both brothers, drew up their agreement. The following printed notice was issued:

CO-PARTNERSHIP NOTICE.

Oliver P. Scaife, having sold his entire interest in the firm of WM. B. SCAIFE & SONS to Charles C. Scaife, has ceased to be a member of said firm. All accounts will be settled by the firm, which continues business as heretofore, and in the same name.

OLIVER P. SCAIFE,

CHAS. C. SCAIFE,

WM. B. SCAIFE & SONS.

Feby. 7th, 1891.

Thus, after only fifteen years, Scaife management reverted to a father-and-son partnership rather than the fraternal type under

which it had been operating. The significance of the change was deep and far-reaching. In the withdrawal of Oliver, the company suffered a loss in talent and ability which must have been felt deeply. The oldest son of the third generation of Scaifes had been actively interested in the business since the mid-century. He knew well all phases of it. In his father's eyes he was the most valuable man the company had ever employed.

Soon after leaving the old firm, Oliver established the Air-Tight Steel Tank Company of Pittsburgh which continued to compete vigorously for pressure tank business until it liquidated in 1932. The fact that an active contestant in the rather limited field of brazed pressure tanks had been created by brother Oliver did nothing to lessen the bitterness that had developed, and the two brothers were estranged until Oliver's death.

At the time of the change of ownership, both the scope of the Scaife business and the size of products fabricated had long outgrown the First-Second-Third Avenue shops. Old-timers tell of passers-by asking in amazement, on seeing a huge girder emerge from the labyrinth of workrooms, how it could possibly have been made in such confining quarters. As his first major decision after acquiring sole ownership, Charles decided to start a new plant for the company's products at Oakmont, about twelve miles above Pittsburgh. In 1892 he began construction there on a site acquired from his wife who had owned the property as an inheritance from her father, James Verner. Today all manufacturing operations are still carried on at this location.

The main office as well as light fabricating, however, continued for some time at a downtown site.

The normal working hours, at the new plant, would give both today's labor and management a jar. "The work day," one old-timer recollects, "Monday through Friday, was from 6:55 A.M. to 5:30 P.M. with twenty-five minutes from 11:55 to 12:20 for lunch. Saturdays the plant worked from 6:55 A.M. to 2:55 P.M. with the usual twenty-five minutes for lunch. Any employee who worked overtime . . . was paid at their regular hourly rate plus

twenty per cent. Due to abuses this was later . . . discontinued." These hours remained unchanged until about 1928.

Verner, as Charles's oldest son was always called, was born in Allegheny on 55 Monterey Street, November 8, 1868. He attended

ESTABLISHED 1802.

WM. B. SCAIFE & SONS.

OFFICES 119 FIRST AVENUE,

PITTSBURG, PA.

Iron Buildings,
Corrugated Iron,
Structural Iron Work,
Caldwell's Spiral Conveyors,
Scaife's Range Boilers,
Galcium Light Cylinders,
High Pressure Tanks.

SEND FOR CATALOGUES AND PRICE LISTS OF ANY OR ALL OF THE ABOVE ARTICLES.

Company products on the eve of moving to Oakmont from a Pittsburgh Times advertisement June 1, 1892

the public school and later the Boys Classical School which had been started by Professor William R. Crabbe who was to found Shady Side Academy a few years later. He qualified for admission to Cornell University at the age of fifteen, but waited a year before entering. In 1889 he graduated with a B.S. degree and received honorable mention for his thesis entitled "On the Natural History of Copper."

Since he did not wish to start working for the family company until his brother also was ready, he took a position as chemist for the Illinois Zinc Company at Carnegie, Pennsylvania. Verner and Will, as the second son of Charles was always called, began to work for Wm. B. Scaife & Sons in 1893.

Verner was married on November 18, 1896 to Hannah Mary Magee, daughter of Frederick M. Magee and his wife, Hannah Mary Gillespie. The Magees were early settlers in Pittsburgh having been located in that city since 1788 when Robert Magee, Mary's great-great grandfather, arrived. Robert Magee came from Londonderry County in the North of Ireland and established a hat shop which continued in operation for many years. Frederick M. Magee, Mary's father, was a brilliantly successful lawyer who died at an early age. On the maternal side the Gillespie family were also early settlers and Mary Magee's grandfather, John Jones Gillespie, established an art firm in 1832 in Pittsburgh, J. J. Gillespie Company, which still bears his name.

Will was born in Allegheny November 9, 1871. After attending public and private schools he entered Cornell University with the Class of 1892, although he did not remain to graduate. He always evinced an interest in sporting events, and was willing to back up his judgment of the outcome of contests with wagers. After his father had given him $1,000 on his twenty-first birthday, Will and another young man went to New Orleans to witness the Corbett-Sullivan fight. He placed the entire amount of his paternal gift on Sullivan, who was defeated, thus making it necessary for him, with much embarrassment, to request his father to forward money for his return trip to Pittsburgh. He always enjoyed outdoor activities and made many trips to the western part of the United States, Alaska, and British Columbia in search of big game. In his association with the company, his interest lay entirely in the production end of the business. He spent many days and nights at the plant in connection with manufacturing problems. On several occasions he was injured in the plant. Once when he was passing a galvanizing kettle some molten zinc

spattered him inflicting severe burns on his face. Another time he almost had his eye put out by a steel chip.

Operations opened at a snail's pace in the impressive new works, as the mid-"Gay Nineties" proved anything but cheerful for business. In 1893 a monetary depression gripped the nation. "One of the most disastrous years that has ever been experienced by the business interests of this country," Charles wrote to Lauriston. "The number of failures in the last six months is appalling. We have reduced our force of workmen, and in most cases have reduced wages. . . . It is almost impossible to secure contracts . . . even at cost. . . . Quite a number of accounts on our books are doubtful, and notes come in place of cash payments."

Months dragged on in the business doldrums. In 1894, citizens gaped as Coxey's pitiful army of down-and-outers straggled through the city to demand relief in Washington. A popular uprising against the conservative policies of both parties, spearheaded by William Jennings Bryan, champion of free silver, further plagued the business community in 1896. "If Bryan is elected," Charles confided to his diary, "we fear a great panic."

On November 3 the Scaife works were closed to get out every possible vote for Republican nominee, William McKinley. Charles received returns in a manner which strikes a nostalgic note to those with pre-radio memories. "We had our house telephone connected with central all night to get election news. At 12:35 felt sure of McKinley's election." Still no magical prosperity ensued, and in February of 1897 Charles wrote, "I see no hope until McKinley is seated." When *that* failed to bring relief, June 8 found the diarist about ready to give up the country:

"The business depression is awful. . . . It is due to the miserable form of Government we have today, and that we have had for over four years past. The ignorance, corruption & lack of patriotism that is obvious to everybody is killing this Republic."

A few days later the harried father and his two elder sons consulted about introducing new lines to save the company. The brutal truth was that no product seemed able to make profit-

headway against the depression, which hobbled every Scaife transaction of the middle nineties. Conversely, scarcely any would prove capable of showing loss in the following fabulous turn-of-the-century years.

Amid the lean times, attempts were made to sell boilers by direct mail to local townsfolk. A dodger of April 30, 1894, read:

> "As the new Water Works System for Verona, Oakmont and Hulton is about completed, you are perhaps considering what style of Hot Water Boiler you will purchase. The average water pressure will be *180 lbs. per square inch*, and we wish to inform you that WE MAKE THE ONLY GALVANIZED STEEL RANGE BOILER THAT WILL STAND SUCH A HEAVY PRESSURE. Get your plumber to put in SCAIFE'S EXTRA HEAVY GALVANIZED RANGE BOILER, and accept no other one which he may offer to you for somewhat less money. A *cheap* boiler will not stand this great pressure, and will cost you far more in the end by bursting and flooding your house. . . ."

Next year, to reduce manufacturing costs, the first galvanizing facilities were introduced at Oakmont, not without considerable difficulty in initial experiments. In 1897 Charles threw all available salesmen into a boiler marketing drive. Inventor John M. Davidson, who had been unsuccessfully trying to develop a filter business for the Scaifes, was ordered to sell boilers to keep his job. Another new salesman, Charles C. Scaife, Jr., youngest son of the family, was sent on the road.

His father wrote solicitously, "CCS, Jr. leaves tomorrow night for Buffalo-Rochester, etc., to try his skill in selling boilers, etc. I hope he may meet with some success, as this is his first trip of this kind & I do not want him to be discouraged, but this is a hard time to go." The youngster's first order, for boilers and expansion tanks, arrived several days later, to be closely followed by another. Charles, Jr. quickly became the star boiler salesman,

covering the midwest and often selling carload lots in St. Louis, Cleveland and Chicago.

His two brothers also were uprooted from their regular jobs, Verner as his father's assistant and Will as works manager; and put on the sales quest. Soon carload orders were being recorded for both.

A sharp struggle ensued for the reviving boiler markets. The most colorful competitor around the turn of the century was a well-known former newspaperwoman, "Nelly Bly," heroine of a globe-girdling trip which beat the fictional time in Jules Verne's novel, *Around The World in Eighty Days*. "Nelly" inherited the Iron Clad Manufacturing Company, Brooklyn, New York, on the death of her husband, and made a hard-driving opponent. Nevertheless, the Scaife business was virtually booming by May 2, 1899, when Charles noted, "We are about 8,000 boilers behind our orders." Subsequent estimates show the company was producing about sixteen per cent of the nation's boiler output at that time.

With pressure tanks, a similar cycle of famine to feast occurred, assisted in the latter stage by the company's successful design for higher pressure limits. After severe difficulties, Charles on November 25, 1899, reported having completed tanks which "tested 1,200 water & three hundred pounds air"; and many orders for such high pressure containers were filled. Sales of other air, hot water and automatic tanks had passed 2,300 in the previous year, and continued to mount.

Other Scaife products, for which some demand continued even during the hard times, were glue cans and ice cans. John M. Davidson was assigned to the latter line as well as boilers, becoming in effect chief ice can salesman. On February 2, 1897, he reported an order for seven hundred galvanized ice cans for Chicago @ $2.45. In St. Louis a week later he contracted for five hundred ice cans (along with two carloads of boilers); and before the year's end extra ice can makers had be to added to the force.

Keeping pace with progress, the Scaifes in this decade enjoyed a new business device, the typewriter. Stenographers (male, of

course) began to be mentioned in the diaries. An agreement with H. W. Caldwell, dated June 20, 1892, appropriately enough survives as the earliest typed document.

Soon after this, however, the Scaife-held Caldwell patents were outmoded by new types of mill machinery. The business is said to have been sold back to Caldwell; certainly it terminated toward the close of the decade. Harry L. Oberlin, who started work September 1, 1898, as errand boy, remembers, "I found no conveyor orders but considerable ends of conveyors scattered over the works, leading me to believe the item had been discontinued about this time."

Following a Scaife pattern, which had become well established, of dropping a product when it became unprofitable in favor of something new, the manufacture of water filters was commenced as the conveyor trade diminished. "Water filters," Walter Scaife recalls, "were first produced by the firm by Charles's . . . buying a patent, then new, and employing the inventor to push its sale. . . . I well remember the first little filters and meeting the inventor at the factory."

The latter gentleman, none other than the Davidson soon to be selling boilers and ice cans, had interested the Scaifes in producing his filter either before or during 1896, when he transferred his patent to them. The company advertised in Pittsburgh papers:

"For pure water use the Scaife filter, all sizes, from 20 gallons to 10,000 gallons capacity per hour, furnished complete and attached to water supply. Send for catalogue, giving illustration of water after filtration. . . ."

These were the days when city purifying plants were for the most part in their infancy, and frequently non-existent. The growing water impurities resulting from urban congestion made the public fearful of typhoid and other water-borne diseases. In theory the filter market looked limitless, but in practice, in the fall of 1896, Scaife filters were losing money. On October 22 Charles's diary reported, "Told Davidson must change mode of getting out filters and make the thing pay or we would not have any use for

Scaife Workers in Front of Oakmont Office, 1893

him, that we may try it till January 1 & see." In December he repeated the warning.

Yet next January found Davidson on the road and managing to pick up a filter order here and there. On January 30 Charles recorded: "Talked by telephone to Davidson at . . . Chicago. He has taken some orders and had his pocket picked in St. Louis. He seems dull . . . in some of his transactions." When the absent-minded inventor had his pocket picked two more times within several years, he had Charles shaking his head. "More than ever convinced we should drop the filter business and also Davidson," was his diary comment.

Not until 1899 did the filter business begin to show its real potentialities. By then larger installations were being ordered, such as one for the Empire Building in Pittsburgh, requiring 3,500 gallons per hour filtration capacity, and also one for Pittsburgh Brewing Company. A chemical expert was hired, and at the turn of the century filters had become a major company product. Scepticism about Davidson had vanished when the Pittsburgh *Leader* of August 21, 1901, reviewed Scaife filter progress:

"The firm is an extensive manufacturer of . . . water filtration and purifying plants. . . . The water filtration plants that have been constructed by the firm have attracted especial attention owing to their superior characteristics and great efficiency. For mechanical filtration the firm . . . has won honors and medals at every exposition held in recent years at which their system has been exhibited."

Structural work was more drastically affected by the mid-nineties depression than any Scaife trade. From a fairly brisk activity in 1891, it sank to almost nothing. Even on October 21, 1896 Charles found, "No work whatever in the construction department"; but demand began to pick up the following year when the company's first coal tipple contract was recorded and a number of building contracts were secured.

Jean A. Thorsell, chief structural engineer, became a key figure in the firm's operations as its most intensive building period then

set in. "A tall, proud and dignified Swede with a Van Dyke beard," and also a hot temper, Thorsell threw himself into the work with tremendous energy. In 1898 there rose under his direction several mill buildings, a warehouse, coal tipples; large water storage tanks, mining installations, and the beginning of a $40,000 building program for Pennsylvania Car Wheel Company. The following year saw contracts made for $20,000 in girders for Carbon Steel Company; new buildings for Harbison Walker; Spang Chalfant & Company; iron work for Chartiers Valley Water Company; and a bar mill for W. D. Wood & Company.

The real structural boom began in 1900. On January 5 Charles noted, "Wilkins of Norfolk ordered building for Government by wire, price $34,000." On June 4, "Verner, Will & Thorsell went to Sharon, Pennsylvania to try to get contract Sharon Steel Company; closed for 1,800 tons." In getting the plans approved a few days later, Thorsell "brought back drawings for another building."

"We do not want any more orders for structural work for some time," Charles then complained. "Full of structural work to overflowing. Have advertised for more men and engineers."

In 1901, a mill construction job for Iroquois Iron Company, Chicago, brought the Scaifes their first experience with labor violence—entirely provoked by non-Scaife workers. "The president of the structural workers of Chicago insisted we employ their men at exorbitant rates," Charles wrote. "The Union men at Chicago attacked our men with clubs," he recorded on March 9. His son Will hurried to the scene; and soon after, "Telephoned has eight police for protection and working away." The strike blew over with the eventual jailing of the "walking delegate," who instigated the trouble. The job kept a Scaife crew busy for many months.

The largest of all Scaife structural contracts came through Pittsburgh's distinguished steel mill engineer, Julian Kennedy. "WBS, Thorsell and I at Julian Kennedy's office," Charles related. "We got contract for Colonial Steel Company @ 3¢ per lb. structural work, very low, had to meet price of American Bridge

Company." "The buildings already spoken of by Julian Kennedy for Colonial Steel Company," Charles learned a few days later, "will amount to over $120,000—and we are full of structural work outside this contract."

The climb from abject depression to these new heights of prosperity shows graphically in the employment figures for "Scaife's Dutch," as the Company workers were familiarly known around Oakmont because of the preponderance of Germans in the shop.

Lithograph Used on Scaife Bridge Advertising

From a low ebb of forty men working in 1895, the pay roll worked up to eighty in the following year despite continuing hard times. In 1897 one hundred forty employees staffed the Oakmont plant, the largest pay roll so far in Scaife history. Employment hit its peak with the structural boom when on August 28, 1900, Charles wrote, "We are still busy on old contracts and have over four hundred men"—a ten-fold expansion in five years!

The glittering new McKinley prosperity, which nurtured this unprecedented Scaife growth, had fulfilled, if somewhat belatedly, Charles's rosy election prophecies. The first two harbingers of good times came in July of 1897—a favorable industrial tariff and

the stirring news of the Alaskan gold strike (Will wanted badly to go).

Early next year Charles viewed the looming Spanish War as likely to "hurt business." On April 9, 1898, he suggested, "I think our Govt. is making a mistake in going to war about Cuban independence. Only should demand indemnity for destruction of *Maine* & loss of life." These common sense considerations were blown to the winds by the war's meteoric triumphs. On May 7 Charles thrilled with the rest of the nation, "Report from Commodore Dewey says he destroyed eleven Spanish boats, killed three hundred Spanish and wounded four hundred & none of his men killed & only six wounded—a naval victory without parallel."

As for business being hurt—evidences of a boom of unmeasured proportions widened men's eyes that fall. "Papers state," Charles wrote, "iron and steel sales beyond any previous records." Soon he was adding, "All mills are *very* busy. Prices of plates, bars, sheet & shape have gone up & hard to get. A queer state of affairs for this time of year." On December 10 he quoted Dun and Bradstreet, "Last month was the largest output of business ever known in this country and the demand keeps up wonderfully." His own outlook at the start of 1899 he summarized as follows:

"This has been quite a busy year, large business in volume—but the smallest margins of profits. We have considerable work on hand but at low prices. It is the general belief that next year will be the largest year for business in the history of this country, which I also believe. We will have to enlarge our works & put in more machinery and employ more men & do a large business at the ruling low prices."

Despite his promising prospects, Charles could not suppress a virtual cry of anguish on January 21, 1899: "Got off balance sheet today—Oh! for the profits that were in business before Cleveland ruined the entire trade of the country."

In this same year of 1899 Charles "started a machine for making hot rivets." He struggled with the "awful" problem of getting iron and steel from mills sold out for months ahead, and with

fending off cancellations from customers wanting quicker delivery. As an interesting sidelight on executive salaries, he raised chief engineer Thorsell from $200, to which he had been cut in the depression, back to $250 a month.

Of first importance, he began preparations for large scale production of another new line, the Kindl truck for freight cars. First mention of the truck dates back to 1897 in Charles's diary. "May 24, Meeting S. W. McMunn, D. B. Kennedy, about us making the Kindl car truck." Orders for five hundred were received that year and several hundred more in 1898, one contract being for the Illinois Central Railroad. Soon after Charles reported, "McMunn . . . says the tests made at Ithaca of the Kindl trucks exceed the strength of any truck on the market—the sixty-ton truck standing one hundred thirty-two tons—a factor of safety of 8 8/10."

Random diary entries reflect the rapid growth of the manufacture. "December 9, 1898, WBS is making an estimate for cost of fitting up works to turn out fifty car trucks per day, $30,000. . . . October 30, 1899, Kindl wired to cover for one thousand cars (2,000 trucks). . . . September 13, 1901, we subscribed for $10,000 Kindl stock."

Finally, on December 10, 1901, "McMunn & Cody here all day. They want to know how soon we can get out 4,900 trucks in addition to the 3,100 they have already ordered." The sky seemed the limit. With Kindl added to other booming Scaife lines the twentieth century dawned in a blaze of prosperity.

Amid the stresses of the rags-to-riches 1890's Charles had been living an eminently happy and constructive personal existence. His interest in the Church had increased with advancing years. He became a leading figure in building the new Calvary Methodist Episcopal Church, on the corner of Allegheny Avenue and Beech Street, which was dedicated shortly after completion in June, 1895.

Home life in the city in those days still partook of country atmosphere. The diaries contain such notes as, "Took cow Rosie to bull today." As late as the spring of 1897, "CCS, Jr. rode

Fancy Letterheads from Incoming Scaife

ALEX GRAYDON Secretary.

ST & COMPANY,
MANUFACTURERS OF AND DEALERS IN
OAD SUPPLIES, MEANS
AND
MACHINERY.
188 WEST SECOND ST. CORNER PLUM.

CELEBRATED

STUDEBAKER WAGON.

OFFICE OF
C. H. OSBORN,
MANUFACTURER & DEALER IN
Carriages, Buggies and Wagons.
HILL STREET, GRIFFIN, GEORGIA.

GRIFFIN, GA. Feb 20 1874

Established 1841

MATER IRON WORKS,
LEMLAMATER & CO. PROPRIETORS,
STEAM PUMPING MACHINERY.
FOR EVERY VARIETY OF WORK
LAMATER STEAM PUMP
WAREROOMS
NO 10 CORTLANDT ST.

ST.

The Edgar Thomson Steel Works.
CARNEGIE, McCANDLESS & CO.
OFFICE, No. 31 FIFTH AVENUE.

Pittsburgh, Feb

CONRAD - NEAB W. H. D. MERRILL

Office of Neab & Merrill,
PLUMBERS, STEAM AND GAS FITTERS,

LEID and IRON PIPE
No 6 PATTS HOUSE BLOCK
ALL KINDS OF PLUMBER'S & GAS FITTER'S MATERIAL CONSTANTLY ON HAND.
JOBBING PROMPTLY ATTENDED TO.

CONRAD NEAB

Indianapolis Feby 3rd 1874

JUNIUS JUDSON,
PATENTEE AND MANUFACTURER OF
Judson's Improved Governor Valves,

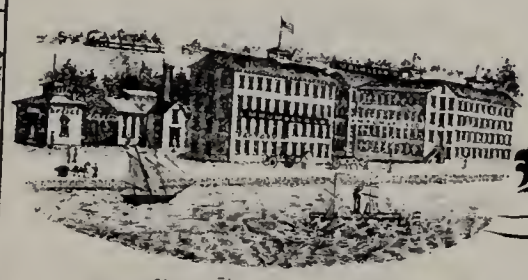
Rochester, Jany 27th 1857

Baltimore & Ohio Railroad Branch Office,
Freight Agent's Office,
Feb 16th 1857

L. M. RUMSEY.

Rec'd 18
Ans
Filed

lips,
WASHERS, HINGES, WAGON HARDWARE &C.



OFFICE OF
L. M. Rumsey & Co.
BRANCH OF THE
SELMA PIPE AND FOUNDRY WORKS
No. 811 North Main Street.

MOSES RUMSEY

MANUFACTURERS OF PUMPS, RAILWAY SUPPLIES, SINKS, SAD IRONS, LEAD PIPE, SHEET & BAR LEAD, BABBIT METAL, PLUMBERS & STEAM FITTERS, BRASS GOODS, PUMP CHAIN, CURBS & TUBING, JOBBERS IN BELTING, HOSE, PACKING, GAS PIPE, FITTINGS, AGRICULTURAL TOOLS

Feby 18

OFFICE OF
CARTWRIGHT, McCURDY & CO.
MANUFACTURERS OF ALL KINDS OF
HOOP, BAND AND HORSE SHOE IRON.
AND STEEL MIXED CARRIAGE TIRE.

YOUNGSTOWN O. Feby 17th 1874

Sons

Claims for errors must be made on receipt of invoice
GOODS SHIPPED AT BUYERS RISK

AMERICAN IRON WORKS,
OFFICE 120 WATER AND 138 FIRST STS.
PITTSBURGH, Aug 4th

H. D. Scaife

BOUGHT OF Jones & Laughlins.
Net Cash With Current Rate of Exchange on Pittsburgh or New York

42 Sheets 18 x 26 com Iron 4060 6¼ 52 7/

Correspondence Well Over Half a Century Ago

horseback to and from our works today, the first time this year. Says the roads are fairly good." There was more leisure time than today. Charles began a long-to-be observed custom of vacationing in Wequetonsing, Michigan. He traveled also to California, only to remark on return, "I am glad I live in Pittsburgh." In 1900 he achieved a high point of contemporary elegance, when he and his wife took a Mediterranean cruise.

In the political sphere, meddling by the state drew a rebuke from the Scaife chief. "March 5, 1897," he wrote, "Two Pennsylvania officials called asking for industrial statistics which I refused to give. They were very polite but I told them the law is inquisitorial as per their printed form."

On September 6, 1901, Charles marked in his diary the third assassination of a President within his lifetime. The entry of September 14 continued, "McKinley died. City bells all tolled & everybody sad. . . ." And five days later, "All factories, stores, etc. closed, more quiet than Sunday. The President to be buried today. Church open."

A serious problem was created in this period by the monopolistic trend of many industries. Charles commented on February 1, 1899, "Every business seems to be going into 'trusts.' The Wrought Iron Pipe manufacturers are now assembled . . . for that purpose. The construction firms are also at it." The independent businessman saw himself threatened with extinction if he stayed out of a "combine"; and the Scaifes themselves were strongly urged to join a plumbing supply dealers trust, capitalized at $8 million and supported by several Pittsburghers. Charles was about to commit his boiler-making operation to this scheme, when the plan fell through.

Like many another medium scale operator, Charles soon grew to be an inveterate enemy of trusts. He heard veiled threats, such as: "George J. Humbert of Connellsville was in. He advised against putting up sheet mill as the trust have arranged with all mill machinery companies and billet and bar manufacturers to do no work for outsiders." The twenty-fifth of February, 1901,

brought the severest jolt in steel industry history to the independents. "The big Carnegie Steel combine said to have been closed. Prepare," advised Charles, "for the greatest panic ever in this country—before next January!!!"

Such troublous developments, together with his own considerable business growth, crystallized Charles's decision as to the future of Wm. B. Scaife & Sons. Several years earlier he had talked with son Will about "making our business into a corporation." On December 5, 1901, he finally "decided to incorporate under New Jersey laws for $850,000." At the organization meeting held December 28, 1901, Charles was elected president; Verner, vice president; Will, general manager; and Charles, Jr., secretary. The new name of Wm. B. Scaife & Sons Company was affixed over the old office (still the main office regardless of the existence of the Oakmont plant), which had recently been renumbered 221 First Avenue in a city-wide change of addressing.

As goods piled up in the firm's new warehouse and Charles wrote, "We have thirty carloads ready to go," the evening papers of December 28 announced that the charter of incorporation had been granted. In this manner the business, founded by Jeffery Scaife in 1802, came to the eve of its one-hundredth anniversary.

IX

Beginning A Second Century

1902-1915

From amid the stormy scenes of today, the first fifteen years of the twentieth century appear as calm as a millpond. But this is largely an illusion of distance and time.

The year 1902 opened favorably for the new corporation. Earnings of the first half reached $128,678, considerably in excess of any prior six-month period; and a first dividend of three and one-half per cent was declared in August. Then, by the next summer, the fickle economic climate plunged industry into the first of the era's three depressions.

"Business has fallen off over fifty per cent in the way of new orders," Charles wrote his brother and confidant, Lauriston, the Boston attorney. "This is not confined to our business, but is even worse in iron and steel. . . . We have let a large number of our workmen go. . . ." Charles's diary paced the creeping commercial paralysis in such phrases as: "October 20, Fed. Nat'l. Bank Pgh. failed. December 15, U.S. Steel notified 150,000 employees of five to twenty per cent wage reduction."

Bad times hung on through the first half of 1904. In the following two and a half years the industrial community mounted up and up on another roller-coaster rise of prosperity, only to plummet downward sickeningly again in 1907. On March 26 Charles noted, "Terrible fall in prices." By October 22 he was reporting, "*Financial Panic*." "Crash in Pittsburgh," he continued next day, "Westinghouse interests (except Airbrake) in hands of receiver. Stock exchange closed. Great financial excitement. 'Run' on several Eastern financial houses."

While battling to adjust to such a treacherous economy, Charles

found himself increasingly beset by a growing power of labor he did not fully comprehend, and by official corruption that cast suspicion even among friends and acquaintances.

Organized labor baffled Charles. In defiance of custom he insisted on operating his works on Labor Day. His diary entries became increasingly scornful of the event. "September 5, 1904, Labor Day. Banks closed. Many drunks." In 1906 this was expanded to, "Labor Day. Our works running. . . . Drunken rabble, harvest for saloon keepers." By 1908, having run out of invective, he contented himself with, "September 7, Labor Day (humbug)!"

A crowning shock to his sensibilities came April 22, 1913, when school children paraded in a "strike" over some fancied grievance. "Outrageous," Charles fulminated, "teaching children anarchy."

In the period 1906-11 a series of municipal and banking scandals rocked Pittsburgh. Among those jailed were a bank president and vice president with whom Charles had dealt. Charles refused to repudiate these friends in their hour of need. "I called on them (in the jail) but did not see them," he wrote stiffly on June 4, 1911. "Took a book for each."

Amid such rising ground swells of change in American life, Charles guided Wm. B. Scaife & Sons Company well into the twentieth century. Notable among his achievements was the expansion of the water purifying field. In the spring of 1902 he took the decisive steps of purchasing the We-Fu-Go Company of Cincinnati and of hiring J. C. William Greth.

We-Fu-Go's peculiar title stood for the first two letters of three partners' names; it also stood for one of America's pioneering water softening and purification systems which had proved its practical value for nearly a decade. Since few water softeners were yet installed in Pittsburgh, this acquisition equipped the company to probe a largely undeveloped field. Greth, formerly with the Frick Company, ice machine builders, Waynesboro, Pennsylvania, came as manager of the new water purification department. In ensuing years his inventive ability contributed sixteen patents to the company, and won him wide recognition as

an authority in his line. Equally important to Charles, he proved an able executive and persuasive salesman.

Greth sold Illinois Central Railroad a $22,500 purification plant and another for $12,000 to National Tube. Purification systems were installed for Youngstown Sheet Tube Company at $14,000, American Wire Company for $11,635. November 15, 1906 found the "Purft. Dept. very full of work." Next summer Charles wrote, "We have $127,000 purf. orders." Shortly afterwards, Greth closed "Birmingham purf. contract, $33,500," the largest yet recorded.

Sales agents for purifying systems were established at about this time in New York and other major cities, laying the foundation for the company's agent organization as it exists today. The first general meeting of these out-of-town men occurred at the Duquesne Club, January 28, 1908.

Meanwhile Greth and John M. Davidson were no longer speaking, as a result of their intense rivalry in filter and purification fields. Each was signing numerous contracts, chiefly between $1,000 and $5,000. On March 12, 1907, Charles reported, "JMD back from Chicago, got contract from Glue Co. for one-half million gal. filter tank." That same fall the filter department added to its clients "the Singer Building, New York, forty-six stories." Davidson then broadened filter operations by building pressure filters horizontally, providing greater filter area for service in paper mills, cotton and woolen mills.

A characteristic incident about this energetic and absent-minded salesman is told by John M. Greer, another veteran employee:

"About 1910 we received an inquiry for a two million gallon gravity filter plant from Consolidation Water Power and Paper Company, Grand Rapids, Michigan, and John M. Davidson . . . decided to call personally. About noon of the day after his departure . . . we received a telegram from Grand Rapids, reading 'Where am I to go and who am I to see?' However, he obtained the contract, which was the largest plant of the type we had built up to that time."

During the same years, pressure tanks and related vessels were substantially improved in quality, variety and manufacturing methods. Most significant step was the introduction of modern acetylene welding. Gus Meckel (he had changed the spelling of his name) traveled to Boston in December of 1906 to study the process. On the next January 27 a local paper reported:

"An autogenous plant, the first of its kind in Pittsburgh district, has been installed in the works of W. B. Scaife & Sons Company, at Oakmont by the Volkhommer-Reich Company for welding all kinds of sheet and plate work for boilers and tanks. This process . . . is considered the most economical, especially for butt welding, and is applicable equally for longitudinal, circular or for cornei seams, which have about the same strength of the metal stock. . . ."

Fred Elder and Frank Meckel (son of Gus) supervised the welding department. Important product advances soon resulted. "We developed and put on the market," stated an early Scaife catalogue in describing this pioneer welding, "the first Rivetless Range Boiler that has been a practical success." Welded tanks of "almost every conceivable shape and dimensions" were also produced.

The Scaifes produced an even more rugged product in "the perfected copper-brazed tank." Providing the "strongest method known of tank construction," this was claimed as "solely our own invention." The 1914 catalogue went on to assert: "Each step originated in our own factory. . . . No other manufacturer furnishes tanks of copper-brazed construction."

The great variety of riveted, welded and brazed pressure vessels manufactured by the Scaifes enjoyed an increasing demand in the pre-World War I era. Two entries from Charles's diary sum up the story. "July 20, 1911, WBS told me we are fifty-five carloads of boiler orders behind," and, "October 22, 1912, we have more orders for boilers and tanks than we can get out this year."

Steel barrels or drums for shipping liquids were also added to the Scaife line—some forty years after the first such barrel was patented by William B., Sr. The company also continued to

fabricate and erect large steel storage tanks, which he had pioneered, "up to any size," according to its literature. The Scaife order book shows occasional contracts for 55,000 gallon storage tanks.

Charles contracted for a noteworthy local undertaking on November 7, 1906. "Called on Pittsburgh Railways," he wrote, "they ordered structural work at Emsworth, $25,276." This was for a viaduct one hundred forty feet high, crossing Lowry's Run to carry the Pittsburgh Railways Company tracks from Emsworth to Dixmont. Charles took a personal interest in this job, often stopping to inspect it. A plaque identifies it as a still-standing example of Scaife bridge building.

Thorsell expanded the erection of coal tipples as a Scaife specialty. Among contracts in this field were two in Maryland at $20,900 and $31,500; one for Kuhns Coal Company; one for Pickands and Company, Cleveland, at $21,000; and at least five for Pittsburgh Coal Company, although several of these were at a"*very low*" figure. The firm shipped 4,227,969 pounds structural steel at $3.25 an hundredweight to Concord, California, for a complete manufacturing plant. In 1908, the company received an award for eighty tons of plate work for Anaconda Copper. Scaife crews worked as far afield as Mexico. Nevertheless on June 14, 1909, Charles complained:

"Many inquiries for structural work. Best contracts go to U. S. Steel and McClintic Marshall & Company (now a part of Bethlehem Steel)." This was a straw in the wind pointing to eventual decline of Scaife structural activity in face of competition from steel and engineering firms. The trend of producers to corrugate their own steel removed another advantage of the Scaife operation.

The Kindl truck business, after a spurt of activity, dropped out of the picture. Early in 1903 Kindl ordered 6,000 frames, and several months after Charles received $30,000 on account. On July 9 and July 10 orders arrived for 1,000 forty-ton trucks each day. Then, on October 10: "Edwin Woods telegraphed resigned from Kindl Co. We don't understand it," Charles wrote. The

One of an old and honored race
    Is he. The colonies were young
When first his forbears found among
    These hills of ours a dwelling place.
        The ax they swung
And mastered woodcraft and the chase.

Here one of them, a man of might,
    Put up a hundred years ago
    An iron plant. Its ruddy glow
To Pittsburg was a beacon light
        Which seemed to show
The way to fortune, fair and bright.

From hand to hand, from father down
    To son and then to son again
    The bus'ness passed, and not in vain,
For still a bulwark of our town
        The Scaifes remain,
And widespread is "C. C.'s" renown.

Charles C. Scaife.

From a Cartoon in the Pittsburgh Leader, October 5, 1904

portent proved bad. Kindl's orders ceased, and its account dragged on unsettled for years.

The Scaifes resourcefully adapted Kindl equipment to manufacturing a new specialty that replaced car trucks. This was a reinforcing bar for concrete ordered by the Kahn Brothers of Detroit. Harry L. Oberlin gives the following recollection of the product:

"The first style of bar pressed by us was a square bar with a web or wing on each side. Some were as long as 60 feet. The web was partly sheared on both sides, usually on both ends, leaving what as nearly as I can describe as fins. Later . . . this type was discontinued and the type of round bar now produced was adopted . . . the only work on this style being to cut to length required.

"Julius Kahn, architect at the home office in Detroit . . . was in charge. Felix and Louis, two brothers were usually here in Oakmont, in and out of the plant continually. . . . Part of their work was done on bulldozers which we owned, previously used in forming parts for car truck frames."

On November 25, 1905, Charles reported, "Kahn Brothers of Detroit at our works today about contracting for increased output." Next July 12 came further good news, "Julius Kahn here from Detroit about increasing output of concrete trusses. WBS phoned Kahn wished to double our present output for them, $24,000 to $48,000."

After a number of profitable years this business was discontinued when the Kahns set up their own manufacturing facilities at Youngstown, Ohio, under the descriptive name of Truscon Steel Company. This company has enjoyed great growth and is now a part of Republic Steel Company. It might have been very profitable for the Scaifes to have acquired the business when it was offered to them for a bargain price.

In this period Charles's older sons assumed much of the operating burden of the business. In 1908 Will married Sally Wendell Hill of Bolivar, Tennessee. At the time newspapers gave this

event quite a write-up as he was considerably older than his bride and was considered an eligible bachelor. The couple had no children. Charles, Jr., after his brilliant start as a salesman, proved a disappointment to his father as the new century advanced. Because of recurrent ill health, which was to result in his premature death, he seemed to lose the stamina necessary to keep at the business steadily. He served as secretary of the company; but, although he remained close to his father's affections, he ceased to be a factor in the business.

On November 29, 1907, Charles, Sr., introduced the fifth generation Scaifes, his son Verner's two elder children, to the sheet iron trade that was in their blood. His diary entry must have concealed an inexpressible thrill: "Took Frederick and Alan through works, their first trip."

Two close family ties were broken early in the century. Brother Oliver, who had been active in the competing Air-Tight Steel Tank Company, suffered a paralytic stroke. On March 11, 1903, Charles wrote: "Marce Scaife (Oliver's son) telephoned Will . . . requesting me to go over and call on Oliver and take his hand. (They had not spoken for years) I did. . . . Marce said he understood." Calling again on the fourteenth, Charles found his brother dying; and he passed away that same day.

Mrs. Mary Frisbee Scaife outlived her eldest son. On November 10, 1904, she celebrated her eighty-ninth birthday. "Mother," Charles wrote on the occasion, "is mentally very bright, cheerful, but weak. She sang to piano accompaniment, recited several poems, etc." Next spring, on May 15, she "slept peacefully away," in her ninetieth year.

Charles himself on September 8, 1904, reached his sixtieth birthday, "an old man," as he put it. Wryly, he remarked that his wife and children presented him with a "handsome, *safe* horse," henceforth often mentioned under the name of "Sixty."

Age, however, was not allowed to interfere with Charles's expansion of plant facilities. On August 25, 1904, he purchased "row of lots back of our Oakmont Works to center of alley, in-

cluding closing of proposed street running through our property to river. . . ." He paid $30,000 for sixteen and a half acres which assured further growing room. During the good times of 1906, a new plant building went up on the extended property. The plant was assuming the impressive proportions shown in its early twentieth century catalogues.

James Verner Scaife

In a few years after this, the last fabricating operations were moved from Pittsburgh to the Oakmont plant. It was high time, too, for the old location had degenerated from an industrial area into such a shady neighborhood that the houses on each side of the office at 221 (previously 119) First Avenue were of questionable repute. The inmates used to lean out of the windows and greet by name many of the employees who were coming to work. They seemed to enjoy the embarrassment they caused the puritanical, we trust, office force.

Mitchell Frey, son of foreman Leonard Frey, retains a vivid memory of these conditions because of an experience shortly after he started work as an office boy. About 7 o'clock one morning he had alighted from the street car at Wood Street and

First Avenue and was hurrying to open the office, when he noticed smoke and flames coming from a building he thought was the office. Running up the street, he was relieved to see it was the adjoining house of ill-fame from which smoke was billowing. He entered it, ran into a first floor room where some curtains were blazing, tore them down and rushed out into the street with his burden where he collided with Charles, Sr., who also believed in being early at work. His employer looked at him aghast and said, "Young man, what do you mean by being in such a place?" Mitchell had felt somewhat of a hero because of his daring and decisive action, but all Charles would say was, "Under no circumstances do I ever want to see you entering or leaving such a place again."

In spite of such surroundings, the office proper was maintained on First Avenue throughout Charles's lifetime.

By 1911 the company dividend had risen to four per cent; and the year 1914 found it holding at this same level. The firm, Charles noted at that time, had a comfortable $175,000 cash in the bank.

Continuing his keen interest in politics, Charles characterized the Socialist party as "anarchists," and deplored the ignorance of voters who supported it. The presidential election of 1912 drew his particular attention. On November 4 he predicted, "It looks to me as if Wilson would be elected by a very large majority, that Taft will be second and Roosevelt third. . . . I expect to vote for Taft—not that I think him fit for the office but to help hold the Republican party together."

Wilson's triumph immediately fulfilled Charles's worst fears. "Another price cut in boilers by competition," he exclaimed on next March 8. "Democratic legislation!!" "The new tariff bill," he predicted, "would flood the country with foreign goods . . . then come lower wages, no work, strikes, riot, bloodshed! What a pity to have a school teacher, a theorist, in such a high executive position."

So incensed did Charles grow over the Wilson tariff that, on October 4, 1913, he passed over the most fateful government act

of the century in a parenthetical phrase: "President W. Wilson signed new tariff bill (incl. income tax). He evidently thinks he has done a wise thing . . . ." Next year Charles began the dreary business of finding out what the income tax meant. "Went to see internal revenue collector," he wrote on February 10—"no deduction on two residences." February 17 found him "working on tax return—awful trouble." Otherwise it represented little burden, his total 1915 payment being $113.82!!

World events now overshadowed national politics. On July 29, 1914, Charles wrote the ominous words, "War declared by Austria vs. Servia." Several days later, "Many thousands of Austrians, Servians, Greeks, Russians are leaving U. S. to go to their several countries and enter their armies. . . . Stock exchanges all over the world closed.

"August 2, War! War! War! Reports of battles in Nancy—Germans vs. French. . . . It looks to me that all nations will be compelled to take sides."

In the terrible fighting of September, the newspapers failed to grasp the significance of the Battle of the Marne, leaving Americans like Charles believing, "The Germans carry everything before them, the resistance put up by the French and English seems very feeble."

In civil life Charles's interests centered around old Central High School and the G.A.R. On September 25, 1905, he served as master of ceremonies at the fiftieth anniversary of the High School, and, "Met many old school mates, now old men and women"; he was also active on memorial committees for his well-known former professor, Philotus Dean. As a member of Duquesne Post No. 259, Grand Army of the Republic, every Memorial Day found him decorating graves of the Post dead. At the dedication of Memorial Hall, Oakland, he marched in the parade and served on the reception committee.

His great hobby and happiness became the development of his country estate, "Woodmont," in Sewickley Heights. He began a spacious mansion there in 1902, which thenceforth served as his

abode from spring until late fall. Under his direction, the bare acres were planted with all kinds of trees and shrubbery.

In these years the automobile began to replace the horse, though never in Charles's affections. "William B. Scaife has his 1906 Packard in full commission," a local paper reported, "it being the first one in Pittsburgh with a brass radiator." This canopy-topped, twenty-four H.P. model made it from Sewickley to Verner's house in Allegheny (twelve miles) in forty-three minutes.

On the eve of Charles's sixty-fourth birthday, September 7, 1908, he gave this self-appraisal: "How do I feel? Not exactly like a 'four-year old' but probably in as good condition as the highest average for the same number of years. I have all my teeth but three that should be in place but for a poor dentist that through drink made a mistake over forty years ago. I eat, sleep well, have very good vision, am deaf in right ear. . . . I must still watch my two T's—tongue and temper, both of which are as bad as ever.

"I love to hunt and fish, but my legs are not so enduring as ten years ago and I have greater weight to carry. I love my family and nature above all earthly things, and our children, sons and daughter-in-law and grandchildren are tireless in their loving, tender devotion. . . so that," he concluded, "I know of no *personal* wish or want that remains ungratified."

As to all blessed with long life, his latter years became a time of leave-taking. Those who had borne the heat of the day with Charles in the building of the firm, one by one left the bench and desk not to return. T. J. Orr, a veteran employee who had been William Scaife's oil supply agent at Marietta and later his head bookkeeper, retired in 1903, to die not long after.

William Boetcher, long-time structural foreman, passed away in 1908. At his funeral Charles remarked a curious bit of sentimentality: "The finger that was cut off on our circular saw many years ago was put in his coffin at his request. . . ."

Alone, from among the old-time employees, Gus Meckel remained. In his fiftieth year with the firm, Charles arranged first-

class passage for him and his wife to Germany, where his father had been born, and added $500 as a gift. For a formal celebration, May 31, 1913, Charles wrote out the remarks:

"We have seen each other almost daily for many years and we are still working together in peace and harmony for the old firm founded by the grandfather of the speaker one hundred eleven years ago. For almost half that period, or fifty years ago last Monday (May 26) a handsome, curly headed, black-eyed young fellow came with his father (who was foreman) to work with us, and has worked 'faithfully, efficiently and continuously' ever since. I know there is not a man here in whose heart is not reserved a large warm loving spot for our friend, co-worker and superintendent, Gustavus A. Meckel."

From 1913 on, Charles himself suffered increasingly from cardiac asthma. One day that autumn he noted, "Fell on the street, legs refused to work." On December 21 the same year his diary reported, "Don't feel well. Can hardly write." On May 14, 1915, he performed a last neighborhood duty, the unveiling of an historical tablet on the site of old Allegheny Town Hall. Charles, Jr. then became very ill; and for much of the remaining year his father attended closely on him. The son died on November 13; and Charles, this shock no doubt hastening the event, followed him in death on December 31, 1915.

Of his seventy-two years Charles had devoted fifty-four, more than any employee, to continuous work for the firm except for his army service during the Civil War. When he began, it was primarily a sheet metal job shop. He left it one of the nation's leading manufacturers of boilers, tanks, water purification and filtration systems and still a factor in the structural field.

His business character was distinguished by extraordinarily clear judgment (he never called a national election wrong) as to the course of events. He held a tight management rein, expected the same hard, sensible work from others as from himself; and guided a conservative but constant policy of expansion.

Whereas Jeffery was the founder, and William the inventive

pioneer, Charles ranks as the organizer of the modern company.

In private life he was kindly, unostentatiously charitable. His diary, where he let off steam, never mentions such characteristic acts as his covering a block of Second Avenue with tanbark so his wagons would not disturb a sick neighbor. He thoroughly reflected the good attributes of America's age of Victorian morals and business ascendency.

X

The Fourth and Fifth Generations

1916-1952

After the death of Charles Cooke Scaife, which occurred the last day of the year 1915, several important changes took place. Sons James Verner and William B. were the surviving members of the fourth generation to whom the direction of the business was to be entrusted. Over the years their responsibility had been increased by their father until, at the time of his death, these two had been in active charge of the management of the company for some time.

Verner was elected president, and Will, vice president and general manager on March 6, 1916.

Verner was a man of manifold interests and throughout his life cultivated many hobbies. He was one of the first amateurs to take successful color photographs. He was a great collector of stamps, coins, autographs, manuscripts and genealogical data. His extensive Civil War Library, which he gave to Cornell University, is one of the most outstanding in the United States. Whenever he had an opportunity for relaxation, he enjoyed fresh-water angling. Although Verner never kept a diary, he did keep voluminous and meticulously neat scrap-books throughout his life; these have preserved many articles concerning the family and business. In his business career he interested himself mainly in the sales end of the company. In 1903, after a nervous breakdown resulting from overwork, he and his wife undertook a trip around the world which in those days was quite an experience, involving as it did, a journey of fourteen days and nights on a sleeping car across Siberia from Vladivostok to St. Petersburg (now Leningrad). In his later life he enjoyed reminiscing about this trip.

At the meeting when Verner was elected president, Mitchell M. Frey, Jr. was elected secretary.

He was a short, pleasant-faced man, with dark hair which he wore parted in the middle and brushed forward like a barber shop quartet member. Over the years of his employment, his responsibilities were increased to the point that he signed many documents and checks for the company. He wrote a beautiful Spencerian script which gave the books and ledgers of the concern a fine appearance. His real name was just Mitchell Frey, but he thought it would look better if he had a middle initial so he chose the letter "M". After a while he thought the name would lend itself to further improvement and dignity so he created a "Jr." and from that time on his signature, impressive to him, was Mitchell M. Frey, Jr.

Carl H. Frey, brother of Mitchell, Harry L. Oberlin, and John M. Greer, each of whom had commenced work as office boys, now occupied positions of responsibility with the company, as did Martin F. Newman, head of the purifying department, which division was assuming a more important part in the business of the company. J. M. Davidson was manager of the filter department. Of the men mentioned above only Harry L. Oberlin still survives as an active employee. He has been with the company for a period of over fifty years and has served ably as purchasing agent for approximately forty years.

Another important man in the Scaife organization at this time was Gus A. Meckel, the superintendent, whose name has been mentioned previously. He was a delightful individual and was full of anecdotes about the early days of the company. When he finally retired on a pension in 1923, he had been in the service of the organization for more than sixty years. Gus's father had been superintendent before him and his son Frank was foreman of the welding department; a grandson also worked for the company.

Gus was one of the thrifty old-type Germans who hated to pay for anything if he could do it himself. He was a splendid mechanic and could make practically any article if it were fabricated of

metal or wood. Many of the rolls and other types of machines in the factory were designed by him.

On one occasion when he was having trouble with his teeth, the dentist recommended having some of them extracted. It went against Gus's thrifty nature to pay for an operation of this kind. Consequently he went home, took a pair of pliers and went to work on himself. Within a day or two he had pulled out every tooth in his head. Afterward, of course, he acquired "store teeth".

Gus had many splendid attributes. He was intensely loyal to his employers and it was his firm conviction that no company could compete with Scaife in producing quality products. Unfortunately, however, he did not realize that other companies were capable of modernizing and improving their methods of manufacture, and that modern assembly line technique was replacing old-time practice. At the time of his retirement he was quite surprised to learn how successful competition had become.

In 1916, less than a year after Charles's death, his wife also died. She had been elected a director of the company following her husband's death, and was the first woman to serve in that capacity. The stock of the company which she owned was inherited by her three children, Verner, Will and Anna S. Ricketson. The two brothers negotiated with Anna for the purchase of her stock and acquired it in 1916. The only other stockholders at that time were uncles Lauriston L. Scaife and Walter B. Scaife, both of whom owned relatively small holdings in the company.

Mrs. Charles C. Scaife's estate owned the land on which the Oakmont factory was situated. An agreement drawn up prior to her death was executed whereby the company purchased the property from her estate.

On November 12, 1917, the directors decided to dissolve the New Jersey Corporation and transfer the assets to a Pennsylvania corporation of the same name. At that time the company's products were galvanized range boilers, copper-brazed air tanks, steel barrels, water purifying apparatus and pressure water filters. Some work was being contracted for in the structural steel de-

partment, but orders in this field were following a diminishing trend, and within a comparatively few years this branch of the business was abandoned.

During World War I the business expanded for the first time to a volume of one million dollars annually. Diesel engine starter tanks for submarines, mine-sweepers and other naval vessels were important wartime products. Flame-thrower tanks and large quan-

Alan M. Scaife

tities of hot water tanks for training camp cantonments were also sold to the U. S. Army. At the conclusion of the war, the company found itself with a large backlog of orders for all types of its products and consequently was able to operate profitably until the sudden and severe depression of 1921 occurred.

On March 26, 1920, the directors and the shareholders approved a proposal to increase the capital stock of the company from $850,000 to $1,000,000. A stock dividend was declared to accomplish this, each shareholder receiving three-seventeenths of a share of new common stock for each share held previously.

Verner and his wife had three sons, the oldest of whom, Frederick Magee Scaife, was killed in an automobile accident in New

Haven during his second year in Yale University on October 20, 1917. Alan M. Scaife, second son of James Verner Scaife, was the first of the fifth generation to be employed by the company; he attended Shady Side Academy in Pittsburgh and later studied mechanical engineering at the Sheffield Scientific School in Yale University, from which he was graduated with general one-year honors in 1920 with the degree of Ph.B. He had served in the United States Naval Reserves during World War I with the rank of seaman, second class, and after the armistice had returned to college to complete his studies. He started to work for the company September 15, 1920 as a draftsman in the water purifying department. He served later as field engineer and was responsible for erecting water purifying plants in many sections of the United States and, on one occasion, in Mexico. He was first elected a director of the company in 1921.

By 1921 the post-war "honeymoon" of easy profits was definitely over. Prices collapsed, and competition became much keener. It was now apparent that the company had neglected to keep pace with modern improvements; consequently large capital expenditures would be necessary for the repair of buildings, and purchase and installation of new machinery. At this point a considerable difference of opinion arose between the two principal owners, Verner and Will. Verner wished to reduce dividend payments (which had been very generous) in order to conserve cash, thereby permitting modernization, while Will felt that a liberal dividend policy should be continued. This was understandable on his part as he had no heirs, whereas Verner had his two sons, Alan and Verner, Jr., who would presumably inherit his interest after his death.

In March, 1924, William B. Scaife died suddenly. Alan was elected vice president of the company, and, to represent the stock owned by Will's widow, Sally Hill Scaife, her brother, Jerome Hill, was elected a director.

The years 1924 through 1930 were lean ones. They were also contentious ones because of disagreement among the directors

regarding policy. New developments in automatic electric welding had made it a comparatively simple matter for companies to start in the range boiler and tank business. Competition became more intense than ever before. Earnings were considerably lower, whereas the need for funds to modernize the plant and buildings seemed never to be satisfied. In 1925, Alan made a trip to the General Electric plant, Schenectady, New York, and on return urged the installation of automatic electric welding apparatus for

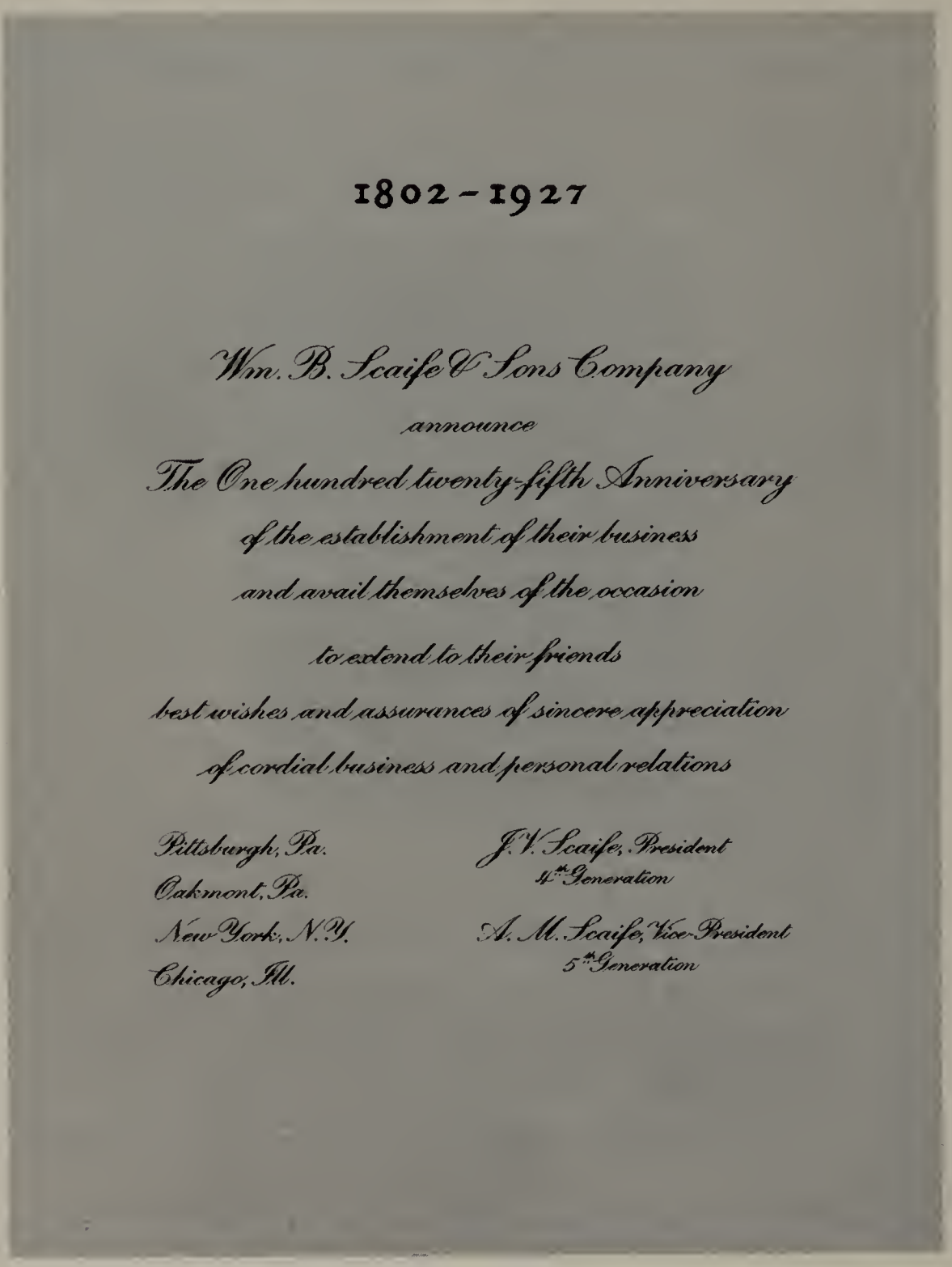
J. Verner Scaife, Jr.

the construction of range boilers. Until this time what little welding had been done in the factory was accomplished by the use of oxygen and acetylene. As a result of his recommendations the first automatic electric seam welding unit was purchased from the General Electric Company and installed in the range boiler production line.

In 1927 the announcement shown on the next page marking the one hundred twenty-fifth anniversary of the company was mailed to friends and customers.

Alan's brother, James Verner Scaife, Jr. who, like his father was always called by his middle name, attended Shady Side Academy in Pittsburgh and later graduated from Phillips Andover Academy, Andover, Massachusetts. He was graduated from Yale

University in 1927 with a B.S. degree and commenced to work in the sales department of the family concern that fall. He was first elected a director of the company February 12, 1929.


1802 - 1927

Wm. B. Scaife & Sons Company

announce

The One hundred twenty-fifth Anniversary

of the establishment of their business

and avail themselves of the occasion

to extend to their friends

best wishes and assurances of sincere appreciation

of cordial business and personal relations

Pittsburgh, Pa.
Oakmont, Pa.
New York, N.Y.
Chicago, Ill.

J. V. Scaife, President
4th Generation

A. M. Scaife, Vice-President
5th Generation

The Company Announces Its One Hundred Twenty-fifth Birthday

On November 16, 1927, Alan married Sarah Cordelia Mellon, daughter of Mr. and Mrs. Richard B. Mellon of Pittsburgh. Her father was the famous banker, industrialist and brother of the many-time Secretary of the Treasury, Andrew W. Mellon. Her

brother, Richard King Mellon, is present chairman of the board of the Mellon National Bank and Trust Company in Pittsburgh and director of many other business firms of national importance. Sarah and Alan have two children, Cordelia Mellon Scaife May, born September 24, 1928, and Richard Mellon Scaife, born July 3, 1932.

James Verner Scaife died in March, 1930. Alan succeeded him as president of the company, while Verner, Jr. became vice president.

During the depression of the early 1930's a large proportion of industrial concerns operated at a loss. Wm. B. Scaife & Sons Company was no exception. Fortunately, the company in the past had accumulated sufficient reserves to tide it over the depression period, but it was necessary to discontinue dividend payments on the common stock. Will's widow, Sally, had been elected a director at the stockholders' meeting held February 14, 1930. She and her representatives urged strongly that the company be liquidated and the assets distributed to the stockholders. This suggestion was resisted by Alan and Verner, but a great deal of bickering ensued. Finally, on February 21, 1935, a deal was made with Sally which resulted in the acquisition by the company of the stock which she had inherited from her husband. Prior to this time, the minority interests of Lauriston L. Scaife and Walter B. Scaife had been acquired by Alan and Verner. With the elimination of Sally as a stockholder, there were then only three stockholders, Mrs. Mary Magee Scaife, widow of Verner (she was elected a director at the meeting at which Sally's stock was acquired), Alan M. Scaife, and J. Verner Scaife, Jr.

During the summer of 1931, Air-Tight Steel Tank Company offered to sell out its business to the company. The matter was considered by the board, but no action was taken at that time. About the middle of the following year, Air-Tight discontinued business and the Scaifes acquired some of its equipment. In August, 1932, Robert E. Cecil, president of Air-Tight, became associated with Wm. B. Scaife & Sons Company as assistant vice president; he is still active with the company in the capacity of vice president.

In the early 1930's a development occurred that proved to be of great importance for the company. About this time the liquefied petroleum gas business showed promising growth. Since "bottled gas" is sold in steel cylinders which are required to comply with Interstate Commerce Commission requirements, a study was undertaken to determine if the company had available equipment to permit the production and sale of these cylinders. It was found that ICC requirements could be fulfilled by using the Scaife copper-brazed method of tank construction. After manufacturing cylinders in small quantities for one or two years, the company secured its first large order from the Standard Oil Company of California, covering 10,000 cylinders. The cylinders manufactured for the initial order were of a quality that by comparison with later standards would be considered poor; however, the price at which the order was accepted introduced competition into this line of business and was the forerunner of a competitive struggle that continued for many years, during which the price of L.P. gas cylinders was cut drastically to about fifty per cent of the selling price in effect before Scaife competition had been introduced. At the present time these cylinders are a main product of the Scaife factory.

Until this time practically all pressure vessels and cylinders had been made with copper-brazed longitudinal seams, and the heads and bottoms had been swaged into position and dip-brazed in pots of brazing spelter and flux. This method of head construction was slow and expensive, and resulted in a high percentage of leakers which showed up on tests and which, of course, had to be repaired before shipment. It was desirable to use the copper-brazed longitudinal seam because of the high efficiency rating granted it by most codes governing pressure tank construction. No manufacturer had produced pressure tanks having a copper-brazed longitudinal seam and welded circumferential seams for the ends. As a means of overcoming the production problems encountered in brazing heads and bottoms, Alan advanced the idea of welding them in. There were many difficulties to be overcome

because the electric arc would usually volatilize the copper in the longitudinal seam and create a leak. However, techniques were worked out, and this method was adopted in rather short order, replacing the older and less efficient method of brazing heads. The quality and appearance of the product were greatly improved and the cost reduced by this process, which, unfortunately, was not patentable, and was copied by other manufacturers without delay.

Alan had served as a director of the Pittsburgh Coal Company for several years during this period. In 1934 he was elected chairman of the board of this large organization. At the same time he tendered his resignation as president of the Wm. B. Scaife & Sons Company and was elected vice president. Verner became president and continued in this office until 1945. Alan served as chairman of the Pittsburgh Coal Company until 1940, at which time he resigned to become associated with Gulf Oil Corporation.

On November 2, 1932, Verner married Mary Ellen Selden of Minneapolis in Wayzata, Minnesota. Her mother had been a roommate of Verner's mother in Ogontz School in the early nineties, and the family had been close friends of many years' standing. Before her marriage Mrs. Selden was Fanne Heffelfinger, of the well-known Minneapolis family. A son, Curtis Selden Scaife, was born to Verner and Mary Ellen on March 10, 1934.

A minute recorded at the directors' meeting held April 18, 1933, indicates that the company was giving consideration to ultramodern methods of transportation. It read, "Discussion of purchase of an airplane for use in sales work took place, but no definite action was taken."

On January 1, 1936, Archie V. Murray was employed at a modest salary in the capacity of auditor of the company. His joining the company became of great significance, since he proved to be a remarkably able and intelligent young man. He had been born in Dudley, England, October 26, 1904, and educated in the Swissvale Public School, the University of Pittsburgh, and the Pittsburgh School of Accountancy. He received his C. P. A. in 1933

after passing successfully the state examinations. Having worked for several local concerns, he became a staff accountant with Main & Company, where he first came to Alan's attention at the time he was auditing the accounts of the Elizabeth Steel Magee Hospital in Pittsburgh. Scaife old-line employees almost without exception resented the introduction of new blood into the company, and every obstruction was put in his way. He was young and brash and seemed to delight in overcoming the obstacles which confronted him. Additional responsibility was given to him

Arch V. Murray, President, Scaife Company

at a rapid rate, and each assignment was handled exceptionally well. He brought to the company many new and occasionally startling ideas.

For some time it had been realized that action should be taken to improve the management which under no stretch of the imagination could be called "aggressive." As a result of many conferences, a group of competent management consultants was employed to make a survey of the firm. When their report was submitted, it called for a complete overhauling of the administrative structure of the company. This report was followed almost to the letter over a period of years, and as a result of changes that were made a greatly improved pattern of organization was developed.

In March, 1936, on St. Patrick's Day to be exact, Pittsburgh suffered the most disastrous flood in its history. The Allegheny River rose many feet beyond any previously reported crest and flooded a large portion of the factory at Oakmont. Although it was apparent that the water might reach one or two of the lower buildings adjacent to the river bank, the river rose so rapidly that it was almost impossible to loosen motors from their bases and elevate them beyond the reach of the flood waters. Great damage was done, and a considerable length of time was necessary to eliminate the dirt and muck that had been deposited on factory floors and to restore the machines to operating condition. Unfortunately many records were lost or destroyed in this flood; most of these dealt with comparatively recent history, however, and none of the very old records was destroyed.

After the Wagner Act had been upheld by the Supreme Court, labor trouble broke out in practically every industrial organization throughout the country. Wm. B. Scaife & Sons Company was not overlooked in the heyday of the New Deal, and it experienced the turmoil that comes with "organization" of the employees. There were several strikes, and bad feeling developed between management and employees. So far as is known there had been no strike against management in the company's one hundred thirty-four previous years of operation, but the New Deal seemed to know all the answers, and the shop employees were persuaded that unionization was necessary in order to protect their own interests. Both management and employees were new at the process of collective bargaining. It did not work well, and it took many years of sincere and patient effort on the part of both the company and the union to establish the mutual respect so necessary for effective production.

In 1936 the employees were represented by the Steel Workers Organizing Committee, which later developed into the United Steel Workers of America. C.I.O. Local No. 1122 is and has been the local union representing the organized employees.

One constructive result of the union-management relationship

has come in job evaluation, rate setting and wage incentive procedures. The company and union together have financed the schooling of union men for this significant work. The knowledge and experience gained by the union participants have led to the upgrading of many of them. Today, the company's Standards Department is largely staffed by "graduates" of this training program.

Pension and social insurance programs similar to those adopted by the steel industry since World War II have also been established for employees. The company's labor contract provides one feature believed unique, namely, a guarantee of one-third of the net labor savings for one year to employees whose operating suggestions are accepted.

At a directors' meeting held May 27, 1937, the resignation of Mitchell M. Frey, Jr. as secretary-treasurer of the company was presented. Mitchell had indicated his desire to retire from his service with the company which had commenced in 1889 under the grandfather of the present management. On motion his resignation was accepted with regret, and a resolution of appreciation for his services was recorded.

Mitchell retired on pension. He remained in poor health until his death on February 13, 1948.

At the same meeting Arch Murray was elected secretary-treasurer and a director of the company.

On April 1, 1939, a contract was signed with the Mellon Institute of Industrial Research in Pittsburgh establishing a Fellowship in metal-working. Dr. Harry L. Anthony was selected to direct this research activity. During the continued operation of this research program, Dr. Anthony has shown remarkable talent and resourcefulness. After graduation from Lafayette College, Easton, Pennsylvania, with a B.S. degree in Mining and Metallurgical Engineering, he was employed by the United States Bureau of Mines. Later he was Instructor in Mining and Metallurgical Engineering at Lafayette College, and in 1933 took his Master's Degree in Engineering at Harvard University. In 1935 he was awarded a degree, Sc.D. in Metallurgical Engineering in Harvard

Engineering School. In November, 1947, Dr. Anthony, together with Harry P. Schane of the Fellowship, was awarded the Lincoln Welding Award, Design for Progress. Their development of an integral cast boss for attachment of pipes or threaded fittings to thin-walled pressure vessels placed first in the division of Research and Education and earned an award of $3,200. Following World War II, in the fall of 1951, Dr. Anthony was awarded a Certificate of Appreciation by the Department of the United States Army in recognition of his outstanding technical work on 4.2 inch Chemical Mortar shells and General Purpose bombs, both of which items were manufactured by the company.

The Fellowship continues to operate under Dr. Anthony's able leadership, and many new methods and processes applicable to the company's production have been developed. Without the guidance of this research it is doubtful if the company could have undertaken the manufacture of its World War II production items.

On December 9, 1940, the directors decided that the rather cumbersome company title, Wm. B. Scaife & Sons Company, should be shortened. Accordingly, a resolution was adopted changing the name to plain Scaife Company (it had remained the same since June 1, 1871, except for the word "company" which had been added at the time of incorporation).

In early 1941, it was decided to discontinue the manufacture of pressure water filters and water purifying and softening apparatus. At one time the design and manufacture of these items had been quite profitable, but it had become apparent in the late thirties that little, if any, profit could be made under the conditions that existed at that time.

World War II had broken out in the fall of 1939, and as the next two or three years passed it became apparent that this company would have a part to play—as it had in the nation's previous conflicts—and would be basically affected by the ominous trend of events. During the period which found the nation arming for defense, Scaife diesel engine starting tanks and other products already were being produced in quantity for the Army and Navy.

Verner was commissioned Lieutenant Senior Grade in the United States Naval Reserve in the summer of 1942 and was granted a leave of absence to take up his duties in Washington, D. C. After a few months in that city he attended the first indoctrination class at the Naval Air Station in Quonset, Rhode Island, and was subsequently assigned to the Naval Air Station at Olathe, Kansas. Later he served at the Naval Air Station in Opa Locka, Florida, and at the Naval Air Station in Santa Cruz, Brazil. Finally, before he was honorably discharged, he was assigned to the Naval Air Station at Patuxent River, Maryland.

In the fall of 1942 Alan joined the wartime organization, Office of Strategic Services, and moved with his family to Washington, D. C. After a few months as a civilian he was commissioned a Major in the Army of the United States, and later was promoted to the rank of Lieutenant Colonel. He served in Washington, D. C. and also had two tours of duty in the European Theatre of Operations. As a result of his wartime service he was awarded the Bronze Star Medal of the United States Army. He was also awarded the Legion of Honor, Grade of Chevalier, and Croix de Guerre with Palm by the French Government. He returned to Pittsburgh in the spring of 1946.

The war brought about significant changes in the management of the company. Because of the pending absences of the Scaife brothers, both of whom were to be in military service, the directors created the position of executive vice president, and Arch Murray was elected to this office March 4, 1942. He thus became the actual operating head of the concern.

The company at that time was quite limited in size for munitions production. Nevertheless, the management was desirous of making its facilities of maximum value to the arms program. In investigating possibilities, the Scaife Company won a sceptical assent from the military authorities to attempt a method, suggested by its representatives, for fabricating the Chemical Warfare Service 4.2 inch mortar shell. The experiment was to be entirely at Scaife expense.

This projectile, as then constructed, was used primarily as a smoke shell, and weighed about fourteen pounds unloaded after being machined from a forty-four pound forging. Accordingly, it was highly wasteful of steel and expensive, due to the great amount of machining required; in addition the end-product was not of high accuracy in flight. Another significant factor was that

4.2-inch Mortar Shells in Action in Sicily

its production had run into a bottleneck by reason of inadequate forging facilities of the nation. Scaife Company proposed to eliminate all these handicaps by fabricating the shell from commercial hot rolled tubing which was available in plentiful quantities.

After extensive trials and experiments the shell was accepted, and the plant was awarded its first shell contract on February 25, 1942. The Scaife design saved twenty pounds per shell, or 10,000 tons per million shells of critical steel; reduced the number and

cost of tools required, and also the amount of skilled labor; and effected an immediate reduction in cost to the government of at least $8.00 per shell or $8,000,000 per million shells. This saving was later increased, so that by the war's end the cost per shell to the government had been reduced by an additional $5.00.

Even more important than these factors, the finished product was so improved in accuracy and range that it was adapted for use with high explosives, and became one of the most deadly, dependable and widely used munitions of the war. Its destructive effect was equivalent to that of a 155-mm. artillery howitzer, while the mortar's light weight and high angle fire often afforded more effective close-in infantry support than artillery could give.

Despite the fact that these shells were rushed into production with the utmost speed, so practical did the design prove that the nearly 4,000,000 fired throughout the war gave a record of almost perfect functioning. The 4.2 inch mortar, which fired this shell, was described in the *Chemical Corps News* as "a contribution to victory which can hardly be overestimated," and was lauded as one of the Army's notable weapons by top military leaders.

On February 4, 1942, shortly before the first shell contract, an order was placed with the Scaife Company by Army Ordnance for 250-pound General Purpose bombs. These bombs were produced by the hot forge spinning method. The technique had proved highly practical; but, as the war progressed, 500-pound bombs gained favor with the Air Force, and the Scaife contract along with a number of others was altered to this weight. Here the program struck a snag.

The spinners had been designed primarily for 250-pound G. P. bombs, but the manufacturer had claimed that they would be suitable for spinning a 500-pound bomb. It was found after many experiments that a redesign of the spinners would be necessary to accommodate the large capacity bomb. Again the Scaifes experimented and improved the method until this operation could be performed in a satisfactory manner. The information obtained as a result of these experiments was given without charge to

other bomb manufacturers in a manner similar to the way in which the company had passed on the technique it had developed in manufacturing trench mortar shells.

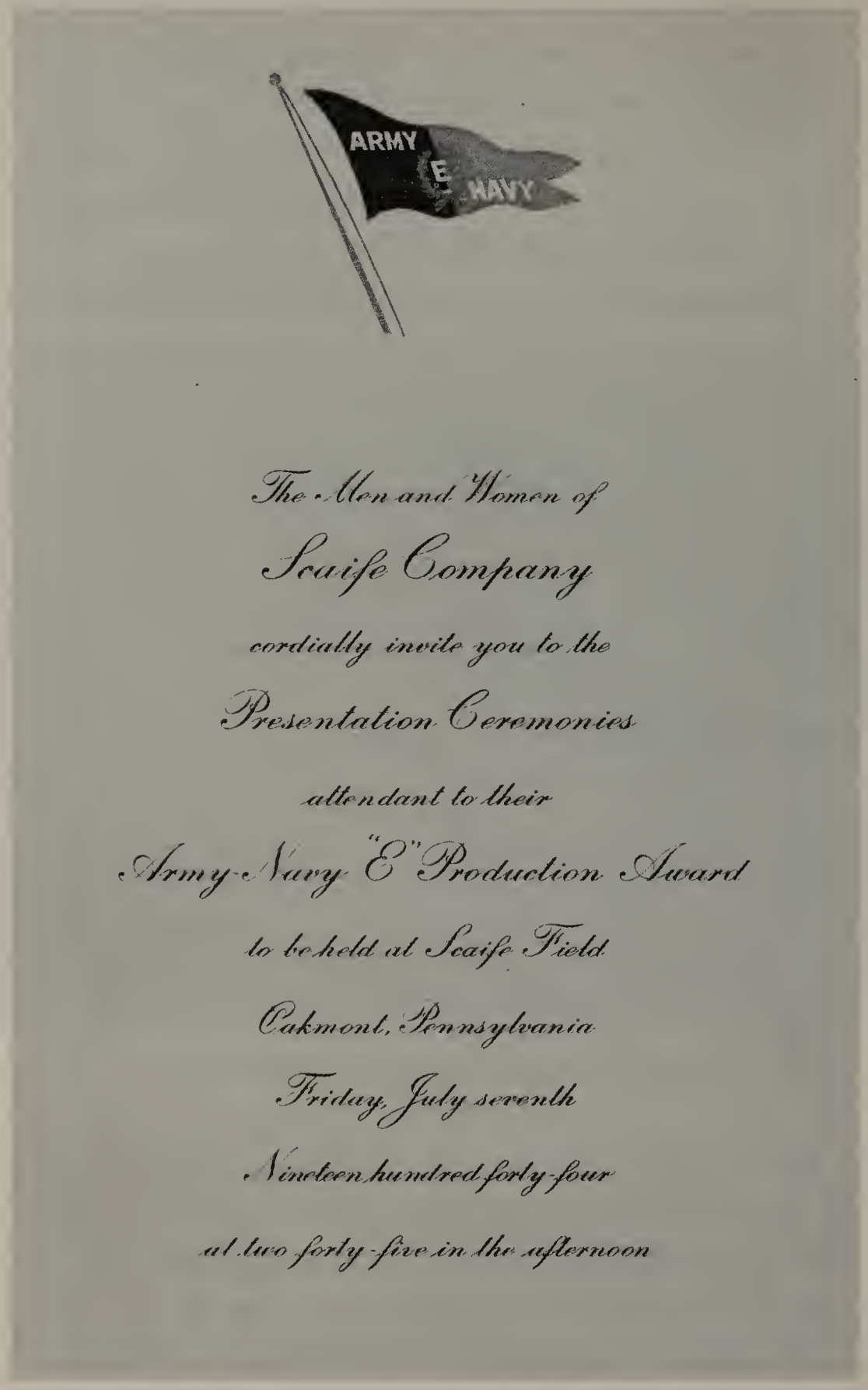
The original price at which a 500-pound bomb contract had been awarded by the government to Scaife was reduced by the company by one-third within several years. This Scaife figure represented the lowest price at which any manufacturer in the country furnished 500-pound G. P. bombs.

After receiving its first war contracts, the company early in

The Scaife Plant at Oakmont, Pennsylvania

March, 1942, began construction of a new munitions building, which increased by half its manufacturing area, and the first shells were coming off the line in August. During the war the plant produced 1,965,467 of the 4.2 inch mortar shells, 115,243 of the 250-pound bombs, and 491,717 of the 500-pound bombs. It also became one of the first to make high pressure tanks for jet-assisted airplane take-offs (JATO units), manufactured special marine escape hatches for use on naval vessels, and produced large numbers of flame-thrower tanks used in combat tanks. The pay

roll increased to 1,850, including many women employed in the shop for the first time. The majority of this staff was trained by



Invitation to Army-Navy E Award

the company, whose volume of production increased many times. For these accomplishments, in which all personnel had a greater

or lesser share, the Army-Navy "E" Award was presented to the company on July 7, 1944, with a large crowd in attendance, including workers, families and friends. The first "E" emblem was pinned on the coat of Fred Elder, whose fifty-one years of service made him the oldest man in the company employ, and the second on Clara Campbell, the oldest woman in point of service on the firm's rolls.

In the spring of 1945 Verner returned to Pittsburgh from service with the United States Navy. He decided that he would devote his efforts to his other interests and relinquished his title of president of Scaife Company. Arch Murray was elected president June 15, 1945, being the first person to occupy this office whose name was not Scaife.

On November 30, 1945 the office of chairman of the board of directors was created and Alan was elected to fill it, a position which he still holds.

A brief sketch follows of the two members of the fifth generation who have substantial interest in the company, and who, during their lives have been actively interested in its management.

Alan was born January 10, 1900, in Pittsburgh. In addition to serving on the board of Scaife Company he is a director of Air Reduction Company, A. M. Byers Company, Gulf Oil Corporation, Mellon National Bank and Trust Company, Pittsburgh Consolidation Coal Company, Pullman, Incorporated and subsidiaries, Bell Telephone Company of Pennsylvania, T. Mellon and Sons, and Waynesburg & Washington Railroad. He is president of the board of trustees, University of Pittsburgh, chairman of the executive committee, Elizabeth Steel Magee Hospital, trustee, Mellon Institute of Industrial Research, and Carnegie Hero Fund Commission. His hobbies include bird shooting, airplane piloting, and collecting first editions. He and his wife have traveled extensively, and their trips have taken them to remote and inaccessible parts of the world. In 1948 he was chosen by the Junior Chamber of Commerce as Man-of-the-Year, and during the same year he was given the Benjamin Rush Award presented by the Medical Society

of the State of Pennsylvania for contributing most as a lay individual to the health of the people of Pennsylvania. In 1950 he was awarded the honorary degree of LL.D. by the University of Pittsburgh.

Verner was born October 14, 1903, in Pittsburgh where he resides at present. In addition to being a director of Scaife Company he is a member of the board of trustees of the Elizabeth Steel Magee Hospital, and the Pittsburgh Zoological Society. His hobbies include coin collecting and genealogical studies. He is one of the foremost authorities in the country on the subject of coin collecting and has written many articles which have appeared in publications in this country and Europe dealing with this subject. His favorite sport is deep-sea fishing and his house contains a splendid collection of marine specimens which he has caught in various coastal waters.

At the Scaife plant, the years 1945 through 1948 saw the removal of machinery which had been used in the production of aerial bombs and chemical and high explosive mortar shells. It also saw the beginning of an ambitious program of modernization of the tank plant. New welding techniques and other operations which had been developed by the Research Fellowship were introduced for the first time.

Before this program had been carried out, a new three-cup process for making L.P. gas cylinders was suggested by Alan which subsequently led to conversion to deep drawing as the basic forming process for pressure vessels. His idea was to form three cups by the conventional single deep draw method, two of which were to provide the heads for the vessel and the third (with head removed) to provide a straight-sided "seamless tube" for the center section of the vessel. The three pieces would then be joined by two girth welds to form the vessel. No longitudinal seams would be necessary, consequently the tank or cylinder would be of greatly improved design.

As experiments proceeded on this idea, the possibility developed that a new process for deep drawing metal known as "reverse

"Spinning" the 500-Pound Bomb at the Scaife Plant

drawing" could be applied to the deep drawing of sheets and plates up to one-fourth inch. This method promised a more economical means not only of making pressure vessels from two deep drawn capsules but also of making entire pressure vessels of similar construction. This process also showed great promise in connection with the production of guided missile bodies and components. These were deciding factors in the decision to convert wherever practicable to reverse drawing or deep drawing from the standard roll-formed braze-weld and welded type construction which had been standard practice for many years.

Previous to the time that Scaife Company commenced forming cylinder capsules (half cylinders) by the reverse draw method this process had been used only on very light gage material such as required for construction of milk cans. For the deep drawing of heavier gage sheets of steel, large and expensive hydraulic presses are required. The first triple action hydraulic press of 750-ton capacity was ordered in October, 1948, and placed in operation during 1949; a much larger press, similar in design, but of 1500-ton capacity was ordered shortly thereafter. This press is now in operation and is the largest in the world of its type.

The adoption of the reverse draw process resulted in a major change in the original modernization program. Extensive postwar production line improvements, some less than a year old, were scrapped and replaced by new equipment which greatly increased the investment in the factory since the war. One triple action deep draw press alone, of four new ones required for the program, cost $250,000. An additional $700,000 will be required to complete the new program, making the total additional investment in plant $2,500,000 since the end of World War II.

On June 24, 1947, the directors authorized an increase in the capital stock of the company from $1,000,000 to $1,500,000, of which $1,240,090 was outstanding as of December 31, 1951.

After the Korean outbreak, history's wheels commenced another cycle. Scaife Company was called upon again to submit bids for the production of high explosive mortar shells. Bids were

accepted by the government and a contract was awarded for the production of a large quantity of these shells. Among other commitments the government insisted that companies receiving contracts should agree to keep their defense production lines in standby five years after the termination of the "emergency." With the knowledge and know-how acquired from the production of these shells in World War II, a line was designed and machinery

The Bombs Arrive at Saipan

secured to operate it. Production of 4.2 inch shells commenced July 16, 1951.

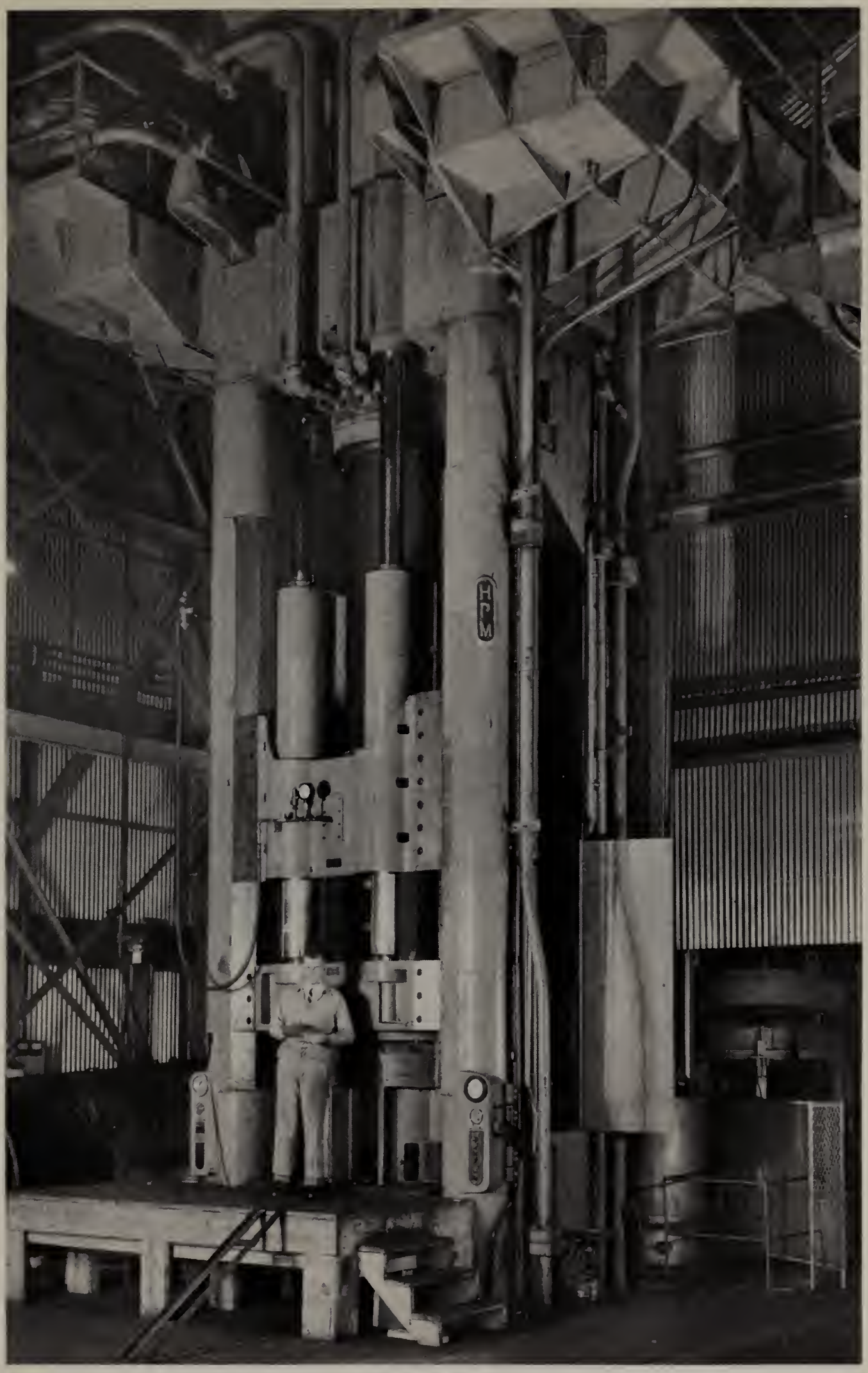
Scaife Company has also undertaken the development of special ordnance items for the U. S. Navy, and for the Air Force rocket program. The knowledge and aptitude which it has demonstrated in regard to deep drawing of metals have been a valuable asset to various military and naval units in the development of new weapons.

In addition to producing 4.2 inch mortar shells, the company in

1951 contracted to heat-treat, form and fabricate armor plate ranging in thickness from one-fourth inch to four inches. At this writing government-owned facilities are being installed in the expectation of commencing full-scale armor plate fabricating operations in May, 1952. The equipment includes hydraulic presses for forming and quenching, gas tempering furnaces, straightening presses, flame-cutting equipment, grinders and radial drills. Certain changes to the armament plant to accommodate the presses are involved. The company has had no previous experience in this line of work, but it is felt that it can adapt its knowledge to the fabrication of armor plate. Pilot lot operations have confirmed this, and it is apparent that the organization will be making its greatest contribution of all time to the defense effort by mid-1952.

Work was started in December, 1951, on a new office building at Oakmont located directly adjacent to the armament plant. This building had been contemplated for a number of years, but had necessarily been postponed due to war conditions, urgency of other programs and the like. With defense operations expanded as at present, however, it was decided that the erection of a new office was an improvement that could no longer be delayed. The new building, expected to be completed in 1952, will provide 25,000 square feet of space on two floors. Estimated cost is $600,000, which is over and above the amount currently projected for the modernization program. Because of defense restrictions, the use of steel has been reduced to a minimum; the floors and roof will be constructed of reinforced concrete slabs, and the walls will be of hollow tile faced with buff brick. It will contain some of the most modern design features such as tinted filter glass windows, zone-controlled air conditioning, recessed fluorescent lighting, acoustic fibre tile ceilings and composition floors. A modern fully equipped first-aid room and dispensary as well as adequate conference rooms will be incorporated.

On January 2, 1952, the first member of the sixth generation, Richard Mellon Scaife, son of Alan, commenced work in the Scaife Fellowship at the Mellon Institute of Industrial Research.



Richard M. Scaife (Sixth Generation) at Work with New Hydraulic Press in Background

He had been educated at Shady Side Academy in Pittsburgh, later Deerfield Academy, Deerfield, Massachusetts, and attended Yale. His present duties are concerned with investigation of the effects of deep drawing operations on steel sheets such as used in the company's products.

The Scaife story from 1802 through a period of one hundred fifty years has now been told. The resources of the company, its organization, and its prospects are at the highest levels yet attained. This record is closed with the hope that those in charge of operating the company in future years will maintain its proud record of service to the community and to the nation.

Medallion Struck to Commemorate Scaife Company's 150th Anniversary

SCAIFE COMPANY

BOARD OF DIRECTORS

ALAN M. SCAIFE, *Chairman*

JAMES M. BOVARD
FRANK R. DENTON
ARCH V. MURRAY
JOHN H. RICKETSON
MARY M. SCAIFE
J. VERNER SCAIFE, JR.

ELECTED AND APPOINTED OFFICERS

A. V. MURRAY	*President*
S. H. BADGETT	*Works Manager*
J. T. STUART	*Secretary-Treasurer*
R. E. CECIL	*Vice President*
E. S. SEDLACHEK	*Sales Manager*
J. J. DORN	*General Superintendent*
E. J. MAGEE	*Industrial Relations Manager*
H. L. OBERLIN	*Purchasing Agent*
F. C. CAMPBELL, JR.	*Assistant Purchasing Agent*
J. M. McCLURE	*Assistant Purchasing Agent*
R. M. CAMPBELL	*Auditor & Assistant Secretary*
C. E. FORD	*Assistant Secretary*
J. T. STUART	*Paymaster*
LOUISE M. DORN	*Assistant Paymaster*
A. M. HARRELSON	*Controller*

Epilogue

We hope that the length of this book, the inclusion of perhaps too many trivial details, and other detracting aspects of it may be overlooked by the reader. Our forebears were ardent diarists although this trait does not follow down through the modern generation. They left astonishingly voluminous and complete records. Because of the very nature of the business it has been impossible to separate family history from the history of the company; this fact accounts for the inclusion of items which may be of very little general interest. It is doubtful if anyone in the future will bother to gather up family and company records for a continuation of the history of Scaife Company which, with the relentless pressure of taxes, probably will experience scattered ownership in the not too distant future.

Alan M. Scaife

THE SCAIFE COMPANY AND THE SCAIFE FAMILY, published on the occasion of the One Hundred and Fiftieth Anniversary of the founding of the Company, is set in Janson, a type adapted by the Lanston Monotype Company from the original type cut by Anton Janson in Leipzic about 1675.